Leveling the Playing Field:

Assessing Physical Literacy in Children and Youth with Physical Disabilities

Erica Dugas, B. Ph.Ed., B. Ed.

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Brock University

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Abstract

Introduction: Research indicates that there are challenges associated with individuals with a disability acquiring mature movement patterns similar to their able-bodied peers (Capio, Sit & Abernethy, 2011), resulting in the notion that they are physically illiterate. Additionally, the benefits of physical literacy (PL) have not been comprehensively investigated in children/youth with disabilities, nor is there a reliable tool to assess PL in this population. **Purpose:** The main purpose of this research is to pilot a PL assessment tool for children/youth with physical disabilities. **Methods:** By modifying elements from Canadian Sport for Life's Physical Literacy Assessment for Youth (PLAY), participants recruited from two recreation programs will take part in a pre- and post-test assessment using the amended tool. Lived experiences are also documented using semi-structured interviews. **Results:** Results indicate that everyone, regardless of ability, can be physically literate. Participants' scores in individual PLAY*Self* categories paralleled their ranking of PL as the most significant category of literacy. However, this was contradicted by ~70% of participants who testified to partaking in sedentary activities during their leisure time and reported limited participation in a wide range of physical activities. **Conclusions:** PL is an inclusive concept accessible to all and represents a unique journey for each person. The revised PL assessment tool represents the multidimensional facets of PL, but improvement is necessary to accommodate Paralympic or adapted sports/activities in the PLAY*Inventory* questionnaire. Future research should look to comprehensively assess levels of physical literacy in individuals with any disability or exceptionality.

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Chapter I – Introduction

Background

Previous research has demonstrated the undeniable importance of physical activity for healthy childhood development (Eime, Young, Harvey, Charity, & Payne, 2013; Ekelund, Brage, & Wareham, 2004; Murphy & Carbone, 2008; Strong, Malina, Blimkie, Daniels, Dishmn, Gutin, et al., 2005). However, children and youth with disabilities often have lower physical activity levels than children without disabilities and are at an increased risk of limitations to participation in everyday activities (Capio, Sit, Eguia, Abernethy, & Masters, 2015; Feehan, O'Neil, Abdalla, Fragala-Pinkham, Kondrad, Berhane, & Turchil, 2012; Law, King, King, Kertoy, Hurley, Rosenbaum, Young, Hanna, 2006). This can be attributed to delays in cognitive or motor functioning, as well as structural, environmental, and societal barriers to participation (Capio, Sit, & Abernethy, 2011; Martin, 2013).

One of the ways to address the above-mentioned concerns is community-based physical activity: a traditional and well-recognized aspect of recreation and leisure (Brannan, Arick, & Fullerton, 1996). Professionals across a variety of municipal services, such as recreation and leisure, social work, education, health, and rehabilitation consider this type of programming an effective medium for meeting the diverse needs of individuals in the present society (Brannan, Arick, & Fullerton, 1996). Not only does community-based physical activity allow for a safe and effective delivery of physical activity for children and youth with disabilities, it also has the potential to produce positive psycho-motor, cognitive, and emotional changes (Brannan, Arick, & Fullerton, 1996; Martin, 2013; Tyler, Cook, & MacDonald, 2014).

The Physical Literacy Movement

The prevalence of sedentary behaviours, especially in children and youth with a disability, predicates a call for change (Statistics Canada, 2006). Over the last few years, physical literacy has become a major focus of physical education curricula, as well as the promotion of physical activity and sports (Giblin, Collins, & Button, 2014). The concept originates from existential and phenomenological philosophies and considers it a "crucial component of human existence; a construct that enables individuals to lead a fulfilling life through enriching embodied experiences" (Giblin, Collins, & Button, 2014, p. 1177). Castelli, Centeio, Beighle, Carson, and Nicksic (2014) agree with this concept, further stating that physical literacy encompasses all the components of being a "physically educated person" and extends into the application of these skills (p. 96).

This movement is augmented by financial investments due to expectations of "significant future savings to healthcare, improved physical and psychological well-being of the population, increased work-force productivity, and raised levels of expertise in sport and exercise participation (Giblin, Collins, & Button, 2014, p. 1177). However, there are still many vague guidelines governing the structure of physical literacy programs and consequently, few evidence-based policies that inform and support the physical literacy construct (Giblin, Collins, & Button, 2014).

Research Questions

Despite the widespread concern of low physical activity levels for children and youth with disabilities, there is a limited body of research on the topic and its relevance to physical literacy and measures of assessment. This is because very few research studies have been conducted on adapted physical literacy assessments, therefore highlighting a

knowledge gap within this discipline. My interest in physical literacy and experiences with individuals with disabilities has helped me to formulate the following question that will be the focus of my research: Can an assessment tool be used to effectively describe levels of physical literacy in children and youth with physical disabilities?

Therefore, the purpose of my research is to pilot a physical literacy assessment tool for children and youth with physical disabilities in a recreational setting.

Chapter II – Review of Literature

The United Nations Education, Scientific, and Cultural Organization (UNESCO, 2005) provided a working definition of literacy as,

> … the ability to identify, understand, interpret, create, communicate and compute using printed and written material associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve his or her goals, develop his or her knowledge and potential and participate fully in community and wider society. (21)

Many across the word are endorsing literacy as something more than the ability to read and write at an agreed-upon level (Browne & Neal, 1991; Fernandez-Balboa, 1997; Friere & Macedo, 1997; Lounsbery & McKenzie, 2015; Whitehead & Almond, 2014). Browne and Neal (1991) attest that even though written word today as it is used in various media of communication is the basis of communication, "imposing conventional literacy as the ability to read and write fails to recognize the principles of cultural relativism and the conditions under which communication takes a variety of forms" (p. 165). In this context, literacy describes how individuals communicate in society, and the social practices and relationships in which they engage to know about knowledge, language, and culture (Corlett & Mandigo, 2013; Mandigo, Francis, Lodewyk, & Lopez, 2009; Roetaert & Jefferies, 2014). Resultantly, this broadens the understanding of the word, and the theory of multiple literacies claims legitimacy (Browne & Neal, 1991; Corlett & Mandigo, 2013; Mandigo, Francis, Lodewyk, & Lopez, 2009).

Physical Literacy: Theory

The development of the concept of physical literacy has stemmed over eighty years, and has been referred to sparingly by several writers in a variety of contexts (Roetert & Jefferies, 2014). Morrison (1969) first defined physical literacy holistically, stating that physically literate individuals not only move efficiently but also move creatively, competently, and with enthusiasm (Roetert & Jefferies, 2014). Other definitions claim Roetert and Jefferies (2014), were concerned with movement as communication or a form of language. The different perspectives have caused significant debate among scholars in the field of physical literacy, and have played a role in describing the concept of physical literacy (Higgs, 2010; Roetert & Jefferies, 2014, p. 38).

Margaret Whitehead, an English physical education and phenomenological scholar, inaugurated the concept of physical literacy to represent the prospect of new curricular pathways in the field of physical education (Lloyd, 2011; Whitehead, 1990, 2001, & 2010). Whitehead (2010) describes physical literacy as "the motivation, confidence, physical competence, knowledge and understanding to maintain physical activity throughout the lifecourse" (p. 5) and is aligned with her monist view of the human condition (Lloyd, 2011; McCaffery & Singleton, 2013). This perspective views competence as necessary for personal embodiment; that is, for living fully in the body that is connected with the mind (McCaffery & Singleton, 2013; Whitehead, 2010). This is achieved with an innate understanding of the self as embodied and is therefore highly relative and varied (Lloyd, 2011; McCaffery & Singleton, 2013; Whitehead, 2010).

In more detail, the concept of physical literacy can be attributed to motivation, confidence and physical competence, and effective interaction with the physical environment (Whitehead, 2010). The relationships between these elements are mutually reinforcing, and can be described as follows:

> Motivation can encourage participation and this involvement can enhance confidence and physical competence. The development of this confidence and competence can in turn maintain or increase motivation. Development of confidence and physical competence can facilitate fluent interaction with a wide range of environments. This effective relationship with the environment, with the new challenges this presents, can in turn enhance confidence and physical competence. The success of developing effective relationships with a range of environments can add to motivation. This enhanced motivation can in turn encourage exploration and promote effective interaction with the environment. (p. 14-15)

The above elements characterize physically literate individuals as self-confident in a variety of everyday living situations and in interactions with others, as well as in specific activity settings (Whitehead, 2010). They demonstrate physical potential and value not only the pleasure and fulfillment, but also the challenge and personal development, of their participation in physical activity (Whitehead, 2010). In this way, physically literate individuals understand the importance of physical activity to lifelong health and well-being and contribute to the promotion of involvement in physical activity through the lifecourse (Whitehead, 2010).

What is intriguing, however, is that Lewis, Lessard, and Schaefer (2014) are convinced that Whitehead's (2010) definition of physical literacy includes criteria that go far beyond fundamental movement skills and abilities. When the terms physical and literacy are placed next to one another, it is apparent that if an individual moves efficiently, he or she is physically literate (Lewis, Lessard, & Schaefer, 2014). In this way, physical literacy is simply defined as the ability to move, "similarly to being literate signifies the ability to read," thus highlighting the predisposition that many working in the field of physical literacy have towards the very definition (Lewis, Lessard, & Schaefer, 2014, p. 30).

At the 2014 Association Internationale des Écoles Superieures d'Éducation Physique world congress conference in New Zealand, Margaret Whitehead provided further insight into what physical literacy is, declaring, "[i]n short, physical literacy is an inclusive concept which can be described as a disposition to capitalize on our human embodied capability" (Almond, Whitehead, Macdonald, Keegan, & Keegan, 2014 in Lewis, Lessard, & Schaefer, 2014, p. 30). Many supports of physical literacy, however, are still attracted to the belief that children and youth must be both confident and competent in the fundamental movement skills to become "better movers" (Lewis, Lessard, & Schaefer, 2014, p. 31). Yet, Almond et al. (2014) writes that reducing physical literacy to fundamental movement skills "neglects the consideration of the affective and cognitive elements of the concept" (in Lewis, Lessard, & Schaefer, 2014, p. 31). Therefore, thinking about physical literacy as a disposition instead of a set of physical skills awakens the truly holistic nature of the concept (Lewis, Lessard, & Shaefer, 2014).

Physical Literacy: Sport

Elite.

Canadian Sport for Life. The Canadian Sport for Life (CS4L) (2011) represents itself as "a movement to improve the quality of sport and physical activity in Canada" (para. 1). "The blending of fundamental movement skills and more specific skills that permit a child to move confidently and with control in a wide range of rhythmic and sport activities is the premise of the CS4L definition of physical literacy" (Fundamental Movement Skills, 2011, p. 14). CS4L (2011) describes physical literacy as "the concept that children must learn how to move properly when they are in preschool and elementary school. Contrary to popular belief, no one is a 'natural born athlete'" (para. 1); and defines it as,

> The mastering of fundamental movement skills and fundamental sport skills that permit a child to read their environment and make appropriate decisions, allowing them to move confidently and with control in a wide range of physical activity situations. It supports long-term participation and performance to the best of one's ability. (para. 2)

Further, the Canadian Sport Centre, composed of Higgs, Balyi, Way, Cardinal, Norris, and Bluecardt (2008), defines physical literacy as,

> …the development of fundamental movement skills and fundamental sport skills that permit a child to move confidently and with control, in a wide range of physical activity, rhythmic (dance) and sport situations. Physical literacy also includes the ability to 'read' what is going on around them in an activity setting and react appropriately to those events. (p. 5)

In response to these perspectives, CS4L introduced the Long-Term Athlete Development (LTAD) model; a model adopted from Balyi's (2001) sport model, which was initially implemented by UK Sports (2002) as the foundation for their sporting system (Mandigo, Francis, Lodewyk, & Lopez, 2009). It is considered the "pathway for developing top-rank athletes and increasing overall participation in sport and physical activity," and includes guidelines for training, competition and recovery based on principles of human development and maturation (CS4L for Coaches, 2011, para. 1). The model's top priority is the best interests of the athlete, rather than the goals of the coaches or parents (CS4L for Coaches, 2011). Although the initial publication date of the LTAD model is unknown, Olszewski (2007) suggests that these ideas were initially published in 2005 or 2006 (McCaffery & Singleton, 2013).

The LTAD model consists of seven stages. The first three stages, Active Start, FUNdamental, and Learn to Train, develop physical literacy before children reach puberty so they have fundamental skills to be active for life (LTAD Stages, 2011). Additionally, CS4L (2011) alleges physical literacy provides the foundation for those who choose to pursue elite training in one sport or activity after age 12. Stages four, five, and six provide elite training for those who want to specialize in one sport and compete at the highest level (LTAD Stages, 2011). The seventh and final stage is about maintaining lifelong participation in competitive or recreational sport or physical activity (LTAD Stages, 2011).

LTAD model for athletes with disabilities. North American societies promote themselves as leaders of "liberty, equality, and inclusion," and describe their citizens as attaining and enjoying a high quality of life (Pothier & Devlin, 2006, p. 16). However,

Pothier and Devlin (2006) dispute this notion, saying that not all people "share equally in the good life, or feel adequately included" (p. 16). Among those who face marginalization, inequalities, and social exclusion are individuals with disabilities (Pothier & Devlin, 2006). In 2012, approximately 14% of the Canadian population aged 15 years or older – or 3.8 million individuals – reported a difficulty or impairment due to a long-term condition or health problem that limited their daily activities (Statistics Canada, 2012). More significantly, the prevalence of these disabilities increased with age (Statistics Canada, 2012).

There is evidence to suggest that responses to the needs of individuals with disabilities have wavered between charity and "welfarism" (Pothier & Devlin, 2006, p. 10). Pothier and Devlin (2006) suggest that a charitable approach focuses on survival rather than on genuine participation in society, and is "highly susceptible to claims of budgetary restraint" (p. 11). However, this does not suggest that charitable measures such as prevention, eradication of barriers, or rehabilitation are "bad things", but "the perspective that disability is misfortune is to buy into a framework of charity and pity rather than equity and inclusion" (Pothier & Devlin, 2006, p. 10). Therefore, it is important to emphasize the inevitability of difference and challenge the stigmatization of individuals with disabilities in North American societies so that they can become more engaged citizens (Pothier & Devlin, 2006).

CS4L and the LTAD model demonstrate the potential to accommodate the needs of persons with a disability for increased activity and greater achievement in sport and physical activity programs. Together, they assert that whether the objectives are recreational or competitive, everyone should have the opportunity to learn sport skills and

become active for life (CS4L, 2011). For this reason, the seven basic LTAD stages apply to all Canadians, but there are two extra stages for persons with a disability: Awareness and First Contact (CS4L, 2011).

The Awareness stage is dedicated to informing the public and prospective athletes with disabilities of available sport and recreation opportunities (CS4L, 2011). At the same time, it is expected that sport and recreation organizations make their program offerings and resources known, particularly for those who may not be aware of the many sporting and physical activities that are available to them (CS4L, 2011). Methods of effective communication are imperative in these circumstances and can facilitate awareness among parents and people who work with persons with disabilities (CS4L, 2011).

The First Contact Stage is designed to ensure persons with disabilities have a positive first experience with an activity or sport and remain engaged (CS4L, 2011). It is the responsibility of the organizations' administration, coaches, and instructors to develop programs that provide prospective athletes with disabilities with a welcoming, comfortable, and safe environment in which to participate (CS4L, 2011).

Paralympic Movement and the Canadian Paralympic Committee. The Paralympic Movement began after World War II to accommodate and assist the gross number of war veterans and civilians who had been injured during the war (Paralympics – History of the Movement, n.d.). In 1944, Dr. Ludwig Guttmann was requested by the British Government to open a spinal injuries centre at the Stoke Mandeville Hospital in Great Britain (Paralympics – History of the Movement, n.d.). Within time, rehabilitation sport expanded to recreational sport, and ultimately, to competitive sport (Paralympics –

History of the Movement, n.d.). Four years later, Dr. Guttmamm organized the first competition for wheelchair athletes on the same day of the Opening Ceremony of the Olympic Games in London, (Paralympics – History of the Movement, n.d.). These Games, referred to as the Stoke Mandeville Games, later became the Paralympic Games, which first took place in Rome, Italy in 1960 (Paralympics – History of the Movement, n.d.). Since then, they have taken place every four years.

Recreation. In the past, recreational opportunities for persons with disabilities have experienced low priority, and many did not receive any form of recreation services. Per Nesbitt (1983), the pattern has been to focus reports, evaluations, and planning, for example, on "those who are served rather than on persons with disabilities who are not served" (p. 104). Furthermore, there are instances where only limited proportions of age levels or classifications of disability are being served (Nesbitt, 1983). In his chapter, Nesbitt (1983) explores the origins of recreation for persons with disabilities in the United States and through these historical considerations, advocates for recreation as a basic human need.

In the United States, the organized play and recreation movement began in 1906 with the formation of the Playground Association of America (PAA) (Nesbitt, 1983). The PAA's purpose was to provide leadership for the nation in response to the enormous need for play and recreation opportunities for vulnerable populations (Nesbitt, 1983). During its first year of operation, the PAA and its Committee on Play in Institutions conducted a survey of play and recreation services in institutions (Nesbitt, 1983). Of the one hundred and thirty institutions serving vulnerable peoples, twenty-two institutions reported "an employee whose special duty it is to oversee the play of the children…" (Nesbitt, 1983, p.

97). One-third of orphanages and reformatories responding "emphasized the necessity for a special director of play" (Nesbitt, 1983, p. 97). These results, coupled with the PAA's recognition of the need for play and recreation for children and youth with disabilities and for programs and services to meet those needs, led to the PAA's designation of play in institutions as one of eight areas in its "Plan of Work for 1908" (Nesbitt, 1983, p. 97). Additionally, many major articles that appeared over the next decade were published under the theme, "Play in Institutions: No Child Needs Play More Than the Child in an Institution" (Nesbitt, 1983, p. 98).

The organized play and recreation movement also served soldiers recovering from injuries and traumatic experiences sustained during World War I. In 1917, the American National Red Cross provided recreation services to "ill and convalescent soldiers" in hospitals and homes, which was in correspondence to the War Camp Community Service program created by the PAA (Nesbitt, 1983, p. 97). These services grew exponentially from 1941-1945 and continued to assist ill and injured soldiers in the World War II military hospitals and clinics (Nesbitt, 1983).

Parks and Recreation Ontario (PRO). Established in 1995, Parks and Recreation Ontario (PRO) is a "non-profit association that advances the health, social and environmental benefits of quality recreation and parks through evidence-based practices, resources and collaborative partnerships" (PRO's Strategic Plan, 2012, para. 1). PRO's more than 5,200 members include professionals, volunteers, educators, students, elected officials, and commercial representatives who share each other's enthusiasm in how recreation and parks contribute to healthy people and dynamic communities (Who We Are, 2008). To support policy development and educational and research initiatives, PRO

relies on partnerships with its members, professionals, and stakeholders. Together, they are committed to improving the health of Ontarians by promoting a healthy, active lifestyle (Who We Are, 2008). Additionally, PRO plays an influential role on the Ontario Task Group on Affordable Access to Recreation and Play Works, and has founded HIGH FIVE, "Canada's only comprehensive quality standard for organizations providing recreation and sport programs to children ages six to ten" (Who We Are, 2008, para. 3).

In 2011, the PRO's Board of Directors and staff began revising its strategic plan. The new Strategic Plan, which extends from 2012 to the end of 2015, builds on the achievements of the previous plan and aligns PRO's Vision and Mission with current trends in health and wellness (PRO's Strategic Plan, 2012). As well, it reflects core values of quality, flexibility, and sustainability that support the recreation and parks sector and promotes the benefits of accessible, quality recreation and park services (PRO's Strategic Plan, 2012). Accordingly, PRO generated three strategic directions: positively influencing policy, building capacity, and quality assurance (PRO's Strategic Plan, 2012). PRO will use this plan to guide its activities and support strong, healthy communities by:

> …advancing the development of government policy that ensures safe, affordable, accessible and quality recreation and parks opportunities and increase awareness of the importance and benefit of recreation and parks; strengthening the capacity of sector stakeholders to help Ontarians lead healthier lifestyles; and strengthening quality standards to facilitate continuous improvement in service delivery. (PRO's Strategic Plan, 2012, p. 3-5)

Consistent with CS4L, recreational professionals play an integral role in developing physical literacy in children and youth, as well as promoting lifelong physical activity for all Canadians (CS4L for Recreation Professionals, 2011). To enhance this, CS4L recommends aligning recreation and sport services and initiatives that will collectively increase physical activity opportunities and create a positive experience for all. For instance, some community benefits include ongoing sport play, increased communication among municipalities and sports groups, enhanced coaching proficiency and joint-use agreements with school districts, while benefits in other community sectors include improved health and motivation, lower absenteeism, broader reach of programming, expanded facility use, and longer retention of athletes (Benefits of Aligning Recreation and Sport, 2011). Furthermore, by aligning their programming, schools, recreation and sport groups can address three important areas: multisport programs for physical literacy; programming for lifelong activity and excellence; and building capacity (Benefits of Aligning Recreation and Sport, 2011).

Physical Literacy: Education and Pedagogy

Physical education. It has been discussed that the definitions and understanding of physical literacy have emerged primarily through the sport system (Coates, 2011; Liedl, 2013; Mandigo, Francis, Lodewyk, & Lopez, 2009; Marshden & Weston, 2007). "Even though sport and physical education (PE) are comparable, they do not always share the same goals or serve the same individuals" (Mandigo, Francis, Lodewyk, & Lopez, 2009, p. 5). Coates (2011) and Mandigo. Francis, Lodewyk, and Lopez (2009) allege that schools; in particular, the subject of physical education, are "ideally positioned to foster students' development of physical literacy given its mandate to provide equal

and equitable access to the development of the skills, knowledge, and attitudes needed to become physically literate" (p. 5). At the same time, it is imperative to ensure that the development of physical literacy within physical education mutually supports the development of physical literacy within sport (Mandigo, Francis, Lodewyk, & Lopez, 2009). Thus, the development of physically literate individuals is a priority that both education and the sport system share (Mandigo, Francis, Lodewyk, & Lopez, 2009).

Within the education system, the concept of physical literacy is based upon the belief that children and youth need to develop the skills, knowledge and attitudes across a wide variety of activities so that they might engage in these activities with poise and confidence (Coates, 2011; Mandigo, Francis, Lodewyk, & Lopez, 2009; Whitehead, 2007). Lounsbery and McKenzie (2015), in accordance with Lewis, Lessard, and Schaefer (2014), further interpret physical literacy as "moving psychomotor learning objectives to the affective and cognitive domains" (p. 2). Coates (2011) and Lundvall (2015) reinforces this understanding by suggesting children and youth appreciate becoming physically literate when they understand the skills required to perform a specific task, or by assessing the environment and demonstrating an understanding of how it might be manipulated for a specific task to be completed. This perspective is based upon Whitehead's (2010) characteristics of physically literacy (Appendix B) and is consistent with other academics that highlight the importance of the interaction of an individual's physical, cognitive, and affective abilities. (Mandigo, Francis, Lodewyk, & Lopez, 2009; Penney & Chandler, 2000; Wright & Burrows, 2006). Penney and Chandler (2000) also suggest that,

> …there are important psychological and sociological dimensions to physical development and that social and psychological skills and abilities required for this development, and for participation and performance in physical activities, need to be more explicit in curriculum design and teaching than may currently be the case. (p. 80-81)

Corlett and Mandigo (2013), Trembley and Lloyd (2010), and Lundvall (2015) further claim that physical literacy is a construct that organizes the understandings of the experience of learning and performing a wide range of activities, and in doing so, captures the essence of what a quality physical education program aims to achieve. This calls for a reconfiguration of instructional methods to support the education of a physically literate child (Lundvall, 2015). "A new pedagogy needs to encompass the development of a self-referenced learning process through engaging the student in exploring the content, experiencing the body in physical activities, and solving movement problems by interacting with the environment" (Lundvall, 2015, p. 3). It is a pedagogy that translates physical literacy into actions, engagement, and commitment (Almond, 2013; Morgan, Bryant, & Diffey, 2013; Whitehead, 2010, 2013).

Physical and Health Education (PHE) Canada. The Canadian education system offers one of the most important opportunities to improve the quality of sport and physical activity for Canadians (CS4L for Educators, 2011). Physical and Health Education Canada (PHE Canada) is the country's leading professional organization for physical and health educators (About Us, 2015). Its members include educators, administrators, and university professors engaged in pre-service teacher training and in research in physical and health education (About Us, 2015). PHE Canada strives to

achieve its vision by supporting schools in becoming “Health Promoting Schools”, that include the provision of Quality Daily Physical Education (QDPA) and fostering healthy school communities (About Us, 2015, para. 3). In doing so, it supports schools through a range of programs, resources and initiatives (About Us, 2015).

It is not surprising that many children lack the basic skills, knowledge, and physical activity behaviours needed to lead healthy active lifestyles, as evidenced by startling levels of physical inactivity, obesity, and decreased fitness (Active Healthy Kids Canada, 2009; Higgs, 2010; Morrow, Fulton, Brener, & Kohl, 2008; Shields, 2006; Trembley and Lloyd, 2010). Over time, this can lead to an increased risk of significant health concerns, such as type 2 diabetes, cancer, stroke, and heart disease, but also affective and cognitive impairments, such as poor cognitive development, low academic achievement, poor socialization, and lessened development of community (CS4L for Educators, 2011). With this in mind, PHE Canada strongly believes that physical education programs are the best way to develop physical literacy in children and youth because they support the development of the students’ skills, knowledge, and attitudes necessary for leading active, healthy lives (What is the relationship between Physical Education and Physical Literacy?, 2010, p. 2).

Per PHE Canada, physically literate individuals “move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person” (Physical Literacy, 2015, para. 1). A quality physical education program incorporates a wide variety of purposeful and authentic learning experiences, from sport skills to outdoor skills, to dance and gymnastics (What is the relationship between Physical Education and Physical Literacy?,

2010). Attention to curriculum expectations, developmentally appropriate activities, and consequent learning outcomes ensures that children of all abilities and interests are able to build a foundation of movement experiences and knowledge (What is the relationship between Physical Education and Physical Literacy?, 2010). Notably, the release of the revised Ontario Health and Physical Education Curriculum in 2015 will be a testament to the significance of physical literacy in provincial physical education curricula.

Fortunately, PHE Canada has developed standards for the delivery of quality physical education program (What is the relationship between Physical Education and Physical Literacy?, 2010). These standards guide the creation of a positive learning environment and further support the development of physical literacy (Appendix D) (What is the relationship between Physical Education and Physical Literacy?, 2010). Even though each province has its own unique physical education curriculum, there are many common elements that are consistent with fostering physical literacy development (What is the relationship between Physical Education and Physical Literacy?, 2010). Furthermore, the acronym "EDUCATION" describes nine ways schools and educators can developing physical literacy among their students (Appendix E) (What is the relationship between Physical Education and Physical Literacy?, 2010, p. 3).

In brief, physical literacy is an important priority for educators and practitioners (What is the relationship between Physical Education and Physical Literacy?, 2010). In spite of the ongoing challenges to ensure every child has the foundation that they need to be physically active and make healthy choices, it is crucial that everyone with a responsibility to ensure the optimal development of children demonstrate their role in

fostering physical literacy for students now, and for years to come (What is the relationship between Physical Education and Physical Literacy?, 2010).

Teacher training programs. Smith and Green (2004) claim that physical education teachers are often unwilling to give up the "sporting tradition," and therefore favour activities that require extensive skills and competencies (in Coates, 2011, p. 177). They are shying away from teaching the competency-based aspects of such activities, says Smith and Green (2004), in favour of highlighting fitness aspects, which most children will grasp. Evans's (2004) argument that constructs surrounding the notion of education in physical education have been somewhat lost within initial teacher training (ITT) could go some way to explain this. He states that "talk of 'education' and 'educability' [has been driven] from the language of physical education in the interests of health and fitness" (Evans, 2004, p. 97 in Coates, 2011, p. 177). As such, it could be argued that the conception of physical education is only about physical fitness, constructed through teachers and society, who, per Evans (2004) "may misconstrue the purpose of physical education themselves, in place of a prominent value for physical health and fitness" (in Coates, 2011, p. 177). Alternatively, Lundvall (2015) argues that the role of higher education will emerge as crucial for the next step of the development of the scientific framework as this involves how physical literacy will be "socially configured, nurtured, and embodied in practice" (p. 1).

It is also possible that children and youth are being taught skills and competencies relating to developing their physical literacy, but that they are misinterpreting this, and rather perceptions relating to physical fitness are more prominent (Coates, 2011). Coates (2011) recommends that concepts surrounding physical literacy outcomes need to be

factored more forcefully into the physical education curriculum and embraced by teachers. Newton and Bassett (2013) illustrate this in their article, demonstrating the ability of their physical education teacher-training program at the University of Bedfordshire to go beyond the "single skill paradigm, thereby creating a new ideology for sustainable physical education programs" (in Coates, 2011, p. 180). In doing so, knowledge transfer to children and youth ensures that they are educated about how they can use their bodies and learn about their environment, so that "physical education becomes more about the education of physicality, rather than about producing physically fit children" (Coates, 2011, p. 179; Evans, 2004; Newton & Bassett, 2013). In summary, Newton and Bassett (2013) challenges many to reconsider their assumptions for quality physical education programming.

Physical Literacy: Inclusion

Historically, the entitlement of individuals with a disability to have opportunities to engage in high-quality physical activity began with the Salamanca Statement (Vickerman & DePauw, 2010). The Salamanca Statement established a set of beliefs and proclamations that,

> …every child has fundamental rights to education and identified core principles of providing children with the opportunity to learn, an education system designed to take account of diversity, access to regular child-centred education and the acceptance of inclusive orientation as a means of combating discrimination and building an inclusive society. (Vickerman & DePauw, 2010, p. 130)

According to Farrell (2001), the Salamanca Statement formed the basis on which international legislation, foreign policies, and practices were built for individuals with

disabilities regarding their access to all aspects of society (Booth et al., 1998; Vickerman & DePauw, 2010). Furthermore, the second World Summit on Physical Education identified the "distinctive focus of physical education" on learning processes and teaching approaches while "reaffirming its mission" to support the inclusion of all children whatever their backgrounds and/or abilities (Vickerman & DePauw in Whitehead, 2010, p. 130-131).

Dyson and Millward (2000), Bee and Boyd (2006), Cameron and Murphy (2007), and the World Health Organization (WHO) (2009) believe that the concept of disability can be both complex and diverse. The WHO (2009) explains that the term "disability" is an umbrella term that encompasses impairments, activity limitations, and participation restrictions (in Vickerman & DePauw, 2010, p. 131). It suggests "that 'impairment' is a problem in 'body' function or structure; whereas an 'activity limitation' refers to difficulties encountered by an individual in executing a task or action" (Vickerman & DePauw, 2010, p. 131).

Vickerman and DePauw (2010) consider the promotion of physical literacy in individuals with a disability and argue that it is a universal concept that all can achieve. However, inclusion in this respect must focus on the unique needs of the individual (Vickerman & DePauw, 2010). This interpretation of the definition and understanding of physical literacy upholds the notion of the uniqueness of human beings and how they develop as embodied individuals (Whitehead, 2010). Thus, how individuals with disability exhibit physical literacy will be specific to each of them, as will the pace at which this capability develops (Wright & Sugden, 1999). This contrasts with any attempts to measure certain aspects of physical literacy against "standardized notions and

expectations applied to individuals without disability" (Vickerman & DePauw, 2010, p. 131).

Penney (2002) argues that when notions of physical literacy are applied to inclusion, there is little done to promote inclusivity due to its focus on sport, performance, skills, knowledge and achievement. It can be said that this problem arises, in part, from the preoccupation with high-level skill performance as being the principal goal in participation in physical activity (Lewis, Lessard, & Schaefer, 2014; Whitehead, 2010). The value and relevance of physical activity for those with a disability is often doubted, with perhaps "only the physical fitness or therapeutic aspect being felt to be worthwhile" (Whitehead, 2010, p. 38). However, parents and professionals who work with these individuals need to appreciate that any development in physical competence is valuable and comparisons with those who have no disability are out of place (Whitehead, 2010).

In summary, individuals with a disability have been inaccurately perceived and poorly treated through much of history (Kasser & Lytle, 2005; Martin, 2013; Steadward, Wheeler & Watkinson, 2003). For them, being physically literate enhances confidence, self-esteem, growth and development, fitness, and helps to teach them about their world (Anderson & Heyne, 2010; Martin, 2013; Vickerman & DePauw, 2010).

Inclusive physical activity. Those who work in physical activity settings are uniquely positioned to influence the health and well-being of all individuals, regardless of ability or physical competence. The concept of inclusive physical activity involves much more than simply integrating individuals with diverse abilities into physical activity (Kasser & Lytle, 2005). In fact, it goes beyond providing access to programs and making

accommodations to support participation (Kasser & Lytle, 2005). Inclusive physical activity is a "philosophy that embraces the belef in 'experiential equity' in which there exists a balance of opportunity, consideration, and effort given to all participants" (Kasser & Lytle, 2005. p. 7-8). This philosophy recognizes the "value of participant choice and decision making" as well as the "importance of practitioner responsibility in helping learners achieve a meaningful experience" (Kasser & Lytle, 2005. p. 8). Together, the participant and the practitioner work and strive to create an environment that is accepting, empowering, and accommodating for all people to succeed (Kasser & Lytle, 2005).

For many, opinions on inclusive practices vary per the abilities of the individuals and the circumstances under which they are participating (Kasser & Lytle, 2005). Block (2000) and DePauw and Doll-Tepper (2000) indicate that inclusive environments have been commonly supported in physical education and other recreation and sport programs (Kasser & Lytle, 2005).

Adapted Physical Activity (APA). The American Association for Health, Physical Education, and Recreation (AAHPER), now referred to as the American Association for Health, Physical Education, Recreation and Dance (AAHPERD), first recommended the term "adapted" in 1952 (Sherrill, 1998, p. 8). This recommendation marked a major policy change in that "corrective" and "modified" were the predominant terms for individualized assessment and programming at the time (Sherrill, 1998, p. 8). The decision to change terminology was strongly influenced by the work of Jean Piaget (Sherrill, 1998). Piaget (1962) based his developmental theory on "the concept that 'adaptation' is the fundamental process of change that enables individuals to interact effectively with their environment (as referenced in Sherrill, 1998, p. 8).

> Hutzler and Sherrill (2007) broadly defined Adapted Physical Activity (APA) as, …the body of knowledge that enables the creation of active living opportunities; a set of attitudes and behaviours that lead to the participation of people with a disability in sport and physical activity; and apart from the practice of adaptation, APA is a profession, a scholarly discipline, a service delivery system, and sometimes a program. (p. 8)

Others have primarily envisioned APA as physical activity that "requires adaptation" or "has undergone change" and "that empowers people to participate" (Hutzler & Sherrill, 2007, p. 8). However, much of the relevant literature claims that activities, programs and are cited as critical constructs of APA (AAHPER, 1952; Doll-Tepper, Dahms, Doll, & von Selzam, 1990; Hutzler & Sherrill, 2007; Reid, 2003; Sherrill, 2004; Winnick, 2005). For instance, Hutzler and Sherrill (2007) specify that "[t]he driving concept of APA should NOT be adapting physical activities in the gymnasium but adapting all of the processes involved in making services and empowerment possible" (p. 9). This may include planning, assessment, pedagogy, coaching, counseling, and evaluation, among others (Hutzler & Sherrill, 2007).

Parallel to these definitions and perspectives are the theories of adaptation and empowerment, put forward by Kiphard (1983), Sherrill (1995, 2004), Hutzler (2003), and Reid (2003). Notably, Reid (2003) asserted "empowerment and self-determination are important ideas in the 21st century paradigm for APA" (in Hutzler & Sherrill, 2007, p. 9). However, Sherrill (1993) claimed, "APA recognizes that adaptations are needed for all persons with psychomotor problems, not just those labeled as disabled" (p. xviii). Concurrently, others have constructed definitions that avoid the use of the term

disabilities: for example, “create active living opportunities, regardless of body function, or structure, and whether they are limitations of activity or participation” (Hutzler & Sherrill, 2007, p. 10). As such, “the goal of APA services became (sic) the adaptation of variables to facilitate the achievement of individuals’ aspirations regarding movement outcomes, including attraction and support of exercise partners and making of friends through shared activity” (Hutzler & Sherrill, 2007, p. 10). These statements revealed ongoing controversy whether APA was for all, or only for those identified by the WHO criteria (Appendix C) (Hutzler & Sherrill, 2007).

Adapted Recreation Settings. Participation in leisure is a fundamental right of people with disabilities. According to section d of Article 30 (Participation in Cultural Life, Recreation, Leisure and Sport) of the UN Convention on the Rights of People with Disabilities, state parties are obligated “[t]o ensure that children with disabilities have equal access with other children to participation in play, recreation and leisure and sporting activities, including those activities in the school system” (Soffer & Almog-Bar, 2016, p. 399). Correspondingly, the Americans with Disabilities Act (ADA) of 1988 provided a legal mandate for park and recreation departments to serve individuals with a disability (Devine, 2015; Trieglaff & Labiak, 2016). With this law, “agencies had to make accommodations, including alterations to regular policies, procedures and practices, and/or relocate programs to an accessible site to allow a person to participate” (Trieglaff & Labiak, 2016, p. 52). Today, this has become a common practice for park and recreation departments in various parts of the world, including the United States and Canada, however Lord and Stein (2009) argue that this right has also been largely ignored. This is evidenced by many studies that show that children and youth with

disabilities participate less in recreational activities (Soffer and Almog-Bar, 2016). More so, the available literature predominantly investigates predictors of physical activity or exercise rather than exploring what activities children and youth with disabilities are participating in or the settings in which they occur (Horvat & Franklin, 2001; Sheilds & Synnot, 2014). In these studies, data is often not collected from the perspective of children and youth with disabilities but relies on a convenience sample of sports and recreation industry personnel (Shields & Synnot, 2014). Thus, Obrusnikova and Miccinello (2012) advocate for more studies to focus on environmental characteristics that support meaningful participation of individuals with disabilities. After all, "[r]ights cannot be practiced if opportunity does not exist" (Devine, 2015, p. 9).

As the standards for access to recreational facilities increase, the desire to offer more recreational experiences increases (Trieglaff & Labiak, 2016). Of significance, outdoor recreation has been connected to numerous psychosocial benefits, including increased social skills, self-confidence, and group involvement (Dorsch, Richards, Swain, & Maxey, 2016). Additionally, it can provide "opportunities for feelings of empowerment and control in individuals with disabilities (Dorsch, Richards, Swain, & Maxey, 2016, p. 156). For example, the Easter Seals of Arizona's Adventure Camp hosts participants with disabilities, ages 13-23, at a week-long activity camp to "give them the opportunity to experiment with relying on themselves" (Lyne, 2002, p. 48). Activities include a variety of sports and aquatic recreation, team-building games, and craft projects (Lyne, 2002). According to Mike Tufte, former Easter Seals of Arizona's director of adapted recreation and education, "[w]e bring all the tools that we can think of and adapt each event for whatever the needs are so that everyone can enjoy it." (Lyne, 2002, p. 50).

He also notes that the sense of accomplishment from the entire camp experience in invaluable stating,

> They find out that everyone has a disability of some kind, and that everyone also has strengths. Here they are in a remote area, where they have to work a bit, doing something exceptional. For a young person with some significant disabilities in his or her life, this is a real confidence boost, you can see it in their eyes and the smile from ear to ear. (Lyne, 2002, p. 51)

Still, the efficacy of these programs to provide benefits for individuals with disabilities has not received the same attention as those for their able-bodied peers. In accordance with Obrusnikova and Miccinello (2012), Dorsch, Richards, Swain, and Maxey (2016) give rise to the importance of exploring meaningful experiences of individuals with disabilities in recreation.

Physical Literacy: Assessment Tools

Despite a multitude of programs and interventions designed to promote physical literacy in Canadians, Trembley and Lloyd (2010) reveal that a poll conducted by Decima Research (2008) found only 17% of Canadians are even aware of the term 'physical literacy'. In addition to a more effective awareness campaign about the concept, Trembley and Lloyd (2010) demand a comprehensive and objective measurement of physical literacy. The question then, as it remains now, is how will we know if Canadians are "more physically literacy because of strategic, programmatic, or curricular initiatives if physical literacy is not actually assessed" (Trembley & Lloyd, 2010, p. 30)?

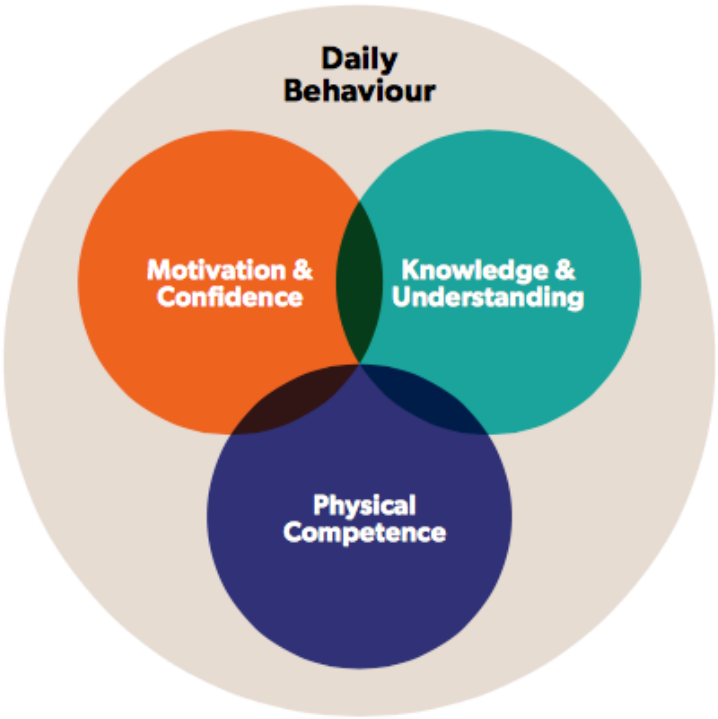
In Canada, there are four assessment tools designed to help assess various aspects of physical literacy. Intended for specific users, these tools are devoted to creating a

"seamless system" for enhancing the physical literacy of Canadian children and youth (Physical Literacy Assessment in Canada, 2014, p. 40). The tools, Canadian Assessment of Physical Literacy (CAPL); PHE Canada's Passport for Life; 60 Minutes Kids' Club Fundamental Movement Skills (FMS) Assessment Tool; and CS4L's Physical Literacy Assessment for Youth (PLAY) Tools were developed by strategic teams composed of individuals working in education, recreation, and sport (Physical Literacy Assessment in Canada, 2014). These sectors concur that development of physical literacy requires the acquisition of an extensive movement vocabulary in a variety of indoor and outdoor settings; however, the assessment of physical literacy should include more than basic or fundamental movement skills (Physical Literacy Assessment in Canada, 2014). In addition to movement skills, physical literacy assessments should assess different domains, such as confidence, environments, participation, comprehension, and motivation (Physical Literacy Assessment in Canada, 2014). The literature also gives rise to the importance of examining the perception of physical literacy by the child, parent, or practitioner to identify barriers or facilitators to participation (Physical Literacy Assessment in Canada, 2014).

Canadian Assessment of Physical Literacy (CAPL). The creation of the CAPL was in response to the need for objective data on physical literacy and correspondingly, a reliable and informative tool for monitoring physical literacy in Canadian children (Longmuir, Boyer, Lloyd, Yang, Boiarskaia, Zhu, & Tremblay, 2015). A combination of assessments of a broad spectrum of skills and abilities that characterize physical literacy were identified through extensive consultations with researchers and practitioners in physical activity and physical education (About, 2014; Longmuir et al., 2015). For

example, the CAPL uses the core domains of physical literacy, namely "motivation and confidence, physical competence, knowledge and understanding, and habitual engagement in physical activity" for examining physical literacy in children (Figure 1) (Longmuir et al., 2015, p. 2). CAPL researchers claim the ability to assess multiple aspects of physical literacy makes the CAPL unique.

Figure 1: The Core Domains of Physical Literacy (CAPL).



Each domain consists of different test elements (Healthy Active Living and Obesity Research Group, 2014). According to the Healthy Active Living and Obesity Research Group (HALO) (2014), this model reflects the assumption that it would be very difficult for an inactive child to exhibit a high level of physical literacy (p. 6). A child who possesses adequate knowledge, understanding, motivation, confidence, and physical competence would be more likely to lead and active, healthy lifestyle (Healthy Active Living and Obesity Research Group, 2014, p. 6). The model also demonstrates that the

domains overlap, highlighting the premise that physical literacy is the result of an interaction between multiple factors (Healthy Active Living and Obesity Research Group, 2014, p. 6). Therefore, the scores on test items in one domain may influence scores in another domain (Healthy Active Living and Obesity Research Group, 2014, p. 6).

Notably, the latest version of the CAPL states that "children with disabilities may not be able to complete all the tests, but all children are encouraged to participate if they can do so without compromising their health" (Healthy Active Living and Obesity Research Group, 2014, p. 7). If this assessment, or the tests within the assessment, is not suitable for all children, then it should be adapted to be appropriate and relevant to the different populations. In short, children are sacred, *tests* are not.

Passport for Life. The Passport for Life assessment tools were designed for use in the education system, primarily by teachers responsible for health and physical education curricula, to enhance student physical literacy (Passport for Life Objectives, 2013). Its purpose is to provide an authentic assessment of the curricular-based themes of Active Participation, Living Skills, Fitness Skills, and Movement Skills (Passport for Life Assessment Rationale, 2013). Students' results, reported within target ranges rather than based on age-related performance norms, will provide valuable information and feedback that will better enable students to develop:

> …an awareness of what it means and why it is important to develop physical literacy and make healthy lifestyle choices; an awareness of their own active participation and living, fitness and movement skills; and an ability to set and

> meet individualized goals on enhancing their physical literacy levels. (Passport for Life Objectives, 2013, p. 1)

In this way, Passport for Life is a formative assessment tool, meaning that it is an assessment *for* learning (Physical Literacy Assessment in Canada, 2014). Its purpose is to be used as an ongoing and informational "reward" that students can use for learning and subsequent goal setting and development (Assessment versus Evaluation, 2013).

60 Minute Kids' Club – Fundamental Movement Skills (FMS) Assessment Tool. The objective of the 60 Minute Kids' Club and Tracker System is to empower families with the knowledge and skills to live a healthy and active lifestyle, and be positive role models for their children and community (Info for parents, n.d.). In association with the Club, the FMS assessment is a tool that can be easily used by a parent or the public to assess a child's motor competence (Physical Literacy Assessment in Canada, 2014). The tool uses visual comparisons of four different levels of performance for each skill: emerging, developing, acquired, and accomplished (Physical Literacy Assessment in Canada, 2014). The assessor determines which video matches the current performance of the child and places the corresponding identification in the chart (Physical Literacy Assessment in Canada, 2014, p. 40). Interestingly, the assessment terminology aligns perfectly with that employed by Passport for Life (Physical Literacy Assessment in Canada, 2014).

Physical Literacy Assessment for Youth (PLAY) Tools. The PLAY Tools is an assessment deployed by CS4L for research and evaluative purposes that is designed for coaches, exercise professionals, physiotherapists, athletic therapists, recreational leaders, parents, and children (CS4L, 2013; Physical Literacy Assessment in Canada, 2014).

Within the PLAY Tools, there are 6 different instruments used to determine strengths and gaps in children's physical literacy levels: PLAY*Fun*; PLAY*Basic*; PLAY*Self*; PLAY*Inventory*; PLAY*Parent*; and PLAY*Coach* (CS4L, 2013). Each tool determines an individual's physical literacy levels in much the same way as literacy or numeracy levels (CS4L, 2013).

Arguably, fundamental movement skills (FMS) and sports skills are imbedded in the definition of physical literacy, and the assessments used to monitor and evaluate it. The literature supports FMS as the "gateway to active participation and performance in sport and recreational pursuits," delineating that individuals who are successful in executing these basic movements in various environments are physically literate (Capio, Sit, & Abernethy, 2011; Fundamental Movement Skills, 2011; Passport for Life Assessment Rationale, 2014, p. 1; Physical Literacy Assessment in Canada, 2014). However, what constitutes a mature form of FMS or sports skills are often unattainable for those with a disability and consequently, these individuals cannot [sic] be considered physically literate (Capio, Sit, & Abernethy, 2011). "The biological factors associated with a physical disability result in a situation where the learner experiences motor constraints, which in effect, may affect the development of FMS" (Capio, Sit, & Abernethy, 2011, p. 2). This illuminates the hypocrisy in Whitehead's (2007) argument that states physical literacy is a capacity that everyone can achieve within his or her own sphere of being, yet one's ability to move with poise, economy and confidence is an "indicator of how important FMS are when aspiring to achieve physical literacy" (Fundamental Movement Skills, 2011, p. 14).

Furthermore, the absence of a valid measurement protocol for children and youth with disabilities limits and diminishes the potential influence of physical activity, physical education, and recreation and sport on this particular population. As the concept of physical literacy gains momentum, so too has the need to be able to monitor it in all people.

Chapter III – Methodology

Qualitative Research

There are many separate uses and meanings of the methods of qualitative research that make it difficult for researchers to agree on any essential definition of the field (Denzin & Lincoln, 1994, p. 3). Borrowing from Nelson et al.'s (1994) attempt to define cultural studies, Denzin and Lincoln (1994) theorize that qualitative research does not belong to a single discipline, nor does it privilege a single methodology over another. In this way, qualitative researchers are committed to the interpretive understanding of the human experience through a multi-method approach (Denzin & Lincoln, 1994; Glesne, 2006).

Philosophical and Paradigmatic Perspectives

Creswell (2007) outlines four philosophical assumptions that lead to an individual's choice to approach a study qualitatively: ontology, epistemology, axiology, and rhetorical. Each perspective has practical implications for designing and conducting research, and informs the paradigms that represent the beliefs of qualitative researchers (Creswell, 2007). Although the paradigms of research differ considerably, they characterize beliefs about knowledge (Creswell, 2007).

In the choice of qualitative research, inquirers make certain philosophical assumptions. These assumptions, derived from the "axiomatic" issues advanced by Guba and Lincoln (1988) consist of a stance toward the "nature of reality (ontology), how the researcher knows what she or he knows (epistemology), the role of values in the research (axiological), and the language of research (rhetorical)" (in Creswell, 2007, p. 16). In my study, I plan to acknowledge ontological and epistemological perspectives. In this way, I

will embrace the idea of multiple realities of the participants being studied by getting as close to them as possible (Creswell, 2007).

My research practice will be further shaped by the interpretivist belief system. This paradigm combines two essential theories that can be traced back to Greek and Roman philosophy (Willis, 2007). One idea is empiricism, suggesting "the experience of the senses is not always the best way to know something" (Willis, 2007, p. 48). The second is relativism; the idea that "the reality we perceive is always conditioned by experiences and culture" (Willis, 2007, p. 48). In this way, humans socially and contextually construct their reality (Glesne, 2006; Willis, 2007). Therefore, interpretivists must recognize that understanding of phenomena occurs through multiple viewpoints on the experience or situation (Glesne, 2006; Willis, 2007).

In this study, I plan to collect and embrace many first-hand perspectives about participants' level of physical literacy and their impressions of the revised physical literacy assessment tool. Kay (2009) believes this approach is beneficial because there is potential to capture an individual's point of view on an experience within the routine of everyday life. This can lead to valuable insights, and has the potential to inform future directions (Kay, 2009). Every (1998) further acknowledges that "there can be an external world (a reality) that is separate from, and not dependent on, the human mind" (in Willis, 2007, p. 51). To help define this (social) reality, there needs to be interaction, development of shared meaning, and communication – "a reality that is dynamic and responsive to the fluctuations of human interaction, perception, and creation of meaning" (Willis, 2007, p. 193).

Framework

Critical disability theory. North American societies promote themselves as leaders of "liberty, equality, and inclusion," and describe their citizens as attaining and enjoying a high quality of life (Pothier & Devlin, 2006, p. 16). However, Pothier and Devlin (2006) dispute this notion, saying that not all people "share equally in the good life, or feel adequately included" (p. 16). Among those who face marginalization, inequalities, and social exclusion are individuals with disabilities (Pothier & Devlin, 2006).

There is evidence to suggest that responses to the needs of individuals with disabilities have wavered between charity and "welfarism" (Pothier & Devlin, 2006, p. 10). Pothier and Devlin (2006) suggest that a charitable approach focuses on survival rather than on genuine participation in society, and is "highly susceptible to claims of budgetary restraint" (p. 11). However, this does not suggest that charitable measures such as prevention, eradication of barriers, or rehabilitation are "bad things", but "the perspective that disability is misfortune is to buy into a framework of charity and pity rather than equity and inclusion" (Pothier & Devlin, 2006, p. 10). Therefore, critical disability theory emphasizes the inevitability of difference and challenges the stigmatization of individuals with disabilities in North American societies so that they can become more engaged citizens (Pothier & Devlin, 2006).

Within the context of my study, the research conducted by Haycock and Smith (2011) illustrates the inequality and exclusion that existed in extra-curricular physical education (ECPE) programs in schools in England and Wales. At the time, it was concluded that much of the curricula was "dominated by traditional team games" and

"typically had a competitive focus" (Penney & Harris, 1997 in Haycock & Smith, 2011, p. 508). Accordingly, many ECPE programs provided "limited opportunities to only a minority of pupils" and were less concerned how the content and organization (negatively) impacted the experiences of individuals with disabilities (Haycock & Smith, 2011, p. 508).

Considering the growing political and policy support at the end of the 1990s, physical activity and physical education became a "vehicle of social policy targeted at promoting the inclusion of individuals with disabilities" (Haycock & Smith, 2011, p. 508). This was, in part, due to a larger political commitment to "tackling inequalities relating to access and opportunities [that] continue to be experienced by individuals with disabilities [sic]" (Barton, 2009 in Haycock & Smith, 2011, p. 509). Thus, the goal of my study is to support the trend towards the integration of children and youth with disabilities, specifically physical disabilities, in society and empower them to be active citizens (Pothier & Devlin, 2006).

Research Reflexivity

Researcher reflexivity has an extensive lineage in qualitative research history. "The ability of humans to reflect, on both the past and the future, grew out of the Enlightenment belief in the ability of "man"[1] to reason in a reasonable manner about "his" fate, impact on the future, and transcend the present" (Pillow, 2003, p. 177). Dewey (1938) wrote that "to reflect is to look back over what has been done to extract the net

[1] "The subject of the Enlightenment was "man" – specifically European man and the ability to reason and engage in reflective thought was situated with this man" (Pillow, 2003, p. 193).

meanings which are the capital stock of intelligent dealing with further experiences" (p. 86-87). To be reflexive, then, not only "contributes to producing knowledge that aids in understanding and gaining insight into the workings of the social world," but also "provides insight on how this knowledge is produced" (Pillow, 2003, p. 178).

In conducting this study, I am aware that my values and biases will be present. I also recognize that my presence will be apparent in my report, and that the voices of my participants represent an interpretation of themselves as much as the subject of the study (Denzin, 1989). This subjectivity requires me to be critically conscious through personal accounting of how my self-location (across for example, gender, race, class, and ethnicity), position, and interests influence all stages of the research process (Pillow, 2003, p. 178). Therefore, the on-going identification of this knowledge production is intended to produce a more rigorous process of doing research (Pillow, 2003).

To address my reflexivity, I engaged in the process proposed by Pillow (2003): reflexivity as recognition of self, where the researcher is filled with the ability to be self-reflexive: "to recognize an otherness of self and the self of other" (p. 181). In accordance with Peshkin (1988), Pillow (2003) claims "subjectivity operates during the entire research process, not just in the writing stage" (p. 181). My ability to "disclose my own subjectivity" depends on my skill to "mark where myself ends and another begins" (Pillow, 2003, p. 182). For example, how I will ask questions during the interview may change depending on how I feel about the topic or the interviewee, as will what I *hear* from the answer (Rubin & Rubin, 1995). A bias against the group of person being interviewed may block access or distort results, but "too much sympathy can also be blinding" (Rubin & Rubin, 1995, p. 13). On the contrary, "neutrality is neither possible

nor desirable, because it does not equip the researcher with enough empathy to elicit personal stories or in-depth description" (Rubin & Rubin, 1995, p. 13).

Kvale (1996) and Rubin and Rubin (1995) agree that interviewing roles and questioning styles reflect the researcher's own personality. Resultantly, I will need to be sensitive to my own biases, and to the social and intellectual baggage I bring to the interview.

Writer's standpoint theory. Harding (1991) supplements reflexivity with a reflection on the writing process. He alleges that "social fingerprints" are left on research by those who include their own set of values, beliefs, perspectives, and biases (p. 191). My age, gender, class, religion, ability, and geographical location are select examples that influence my considerations about the issues I will include in a final report. Each of these elements intersects in a unique way, and is best examined using standpoint theory. Standpoint theory is a "perspective; a place in time and space from which to view the world around us" (Wood, 1993, p. 1). The use of standpoint theory can encourage awareness of situations other than my own, of social structure and power relationships, and further increase self-determination for individuals, thereby promoting change where ever possible (Swigonski, 1993).

Gilbert and Sliep (2009) also argue that reflexivity includes a concern for moral agency; that is, accountability and responsibility for action. This, in turn, results in the acceptance of "social action that goes beyond the interest of the self and privileges the interest of the group or community one represents" (Gilbert & Sliep, 2009, p. 469). One of the most powerful factors that has shaped my interpretation of the world and greatly influenced who I am today is my commitment to athletics and to maintaining a healthy,

active lifestyle. My active participation in sports, across many different levels of competition, has inspired me to pursue an athletic career in university, particularly in competitive swimming. My accomplishments and example have often earned me much recognition, notably, the Canadian Interuniversity Sport Student-Athlete Community Service Award.

My experience in such a diverse lifestyle, whether I am competing on a varsity school team, or contributing through community initiatives, has deepened my respect for social purpose and diversity, and therefore I am more appreciative of the spirit within the members of my community. I am more understanding of the learning that occurs outside of a classroom, and I am confident that my future endeavors will maintain this knowledge and challenge me to explore new opportunities in all disciplines. However, my experience is inherently ableist. Ableism "focuses on the views and attitudes of able-bodied people towards persons with disabilities, and stems from the implicit assumption that the world is designed for those *without* disabilities" (Duncan, 2001, p. 1). In accordance with Hehir (2007), I must recognize and challenge the ableist assumptions that still permeate my experience and involvement in society, as well as guide my perspective of adaptive practices. Within the context of my study, persons with physical disabilities need carefully constructed physical literacy movement initiatives that "recognize the effects of their disability while creating opportunities for them to learn and fully participate in school and society" (Hehir, 2007, p. 14). For this reason, it is necessary to collaborate with APA experts, some of whom may retain a disability, and participants to help inform the design of the revised physical literacy assessment tool.

Furthermore, my high level of competitive sports experience and my desire to work

with children and youth are two innate characteristics that prompted me to join several initiatives within both local and international communities, including IMPACT (youth-at-risk program), Special Olympics, the Brock Niagara Penguins, the Salud Escolar Integral program in El Salvador, the Sport and Physical Activity Conference at the University of Tskubua in Japan, and the United Nations Office on Sport for Development and Peace (UNOSDP) International Sport and Social Impact Summit. My roles as a volunteer, student-facilitator, and program coordinator within these organizations is to lead by example; to be responsible in the use of my discipline, intellect, and talents to inspire at-risk children and youth to be successful in their endeavors, and help individuals with disabilities become engaged with others in a team-like environment. I do my best to empathize with people, thereby dignifying their talents, strengths, and even shortcomings.

Thus, my passion is vested in recognizing individuality and embracing differences. I enjoy creating a stimulating learning environment and planning activities to foster self-confidence and self-esteem, and I know how to ensure everyone is involved. These qualities will impact my research process by adding an emotional attachment to the issues that will be explored and subsequently, described, in my study. At the same time, however, my interest in examining the effectiveness of the relationship between physical literacy and individuals with physical disabilities will aim to introduce a variety of perspectives, and in doing so try to eliminate most the bias that exists in the research (Yin, 2009). This way, the information presented will uphold the purpose of the discourse and encourage a new critical consciousness upon the completion of the report (Yin, 2009).

Method and Procedure

In conducting this study, I plan to modify elements from Canadian Sport for Life's Physical Literacy Assessment for Youth (PLAY) Tools, specifically PLAY*Fun* (Appendix F), PLAY*Self* (Appendix G), and PLAY*Inventory* (Appendix H), to create a contemporary tool to assess current levels of physical literacy in children and youth with physical disabilities. I decided to modify these specific PLAY Tools, instead of another existing physical literacy assessment tool, because I was a member of the research team interested in using the PLAY Tools to discover more about the physical literacy levels of children and youth in Ontario and how those levels can be enhanced through quality assessment, training, and programming. Over the last two years, I attended numerous PLAY trainings conducted by Canadian Sport for Life in St. Catharines and the Greater Toronto Area, and observed recreational program leaders administer the assessments with their respective groups. It was also more convenient to use the revised physical literacy assessment tool in a recreational setting than a school when applying for ethical clearance. I am aware that this decision exposes my bias in selecting the PLAY Tools.

Adapted physical activity (APA) experts assessed the revised tool (Appendix I) using a qualitative questionnaire and this feedback, taken together with my knowledge and experiences and strategies from published literature, enhanced the trustworthiness of the tool. These participants self-identified as an expert in APA provided that they hold a graduate degree or professional certification in disability studies and/or physical education, and can be selected from Ontario. It was also advantageous to have these experts presently working or researching in the field of APA, or retain a disability. However, I neglected to include physical literacy experts in the assessment of the revised

tool. This decision may have limited the potential of the modified tool to effectively describe levels of physical literacy in children and youth with physical disabilities. Future development of this tool should include a collaboration between both APA and physical literacy experts.

Program evaluation. According to Shadish, Cook, and Leviton (1991), it is possible to evaluate anything – including evaluation itself. "Evaluation research is an area of activity devoted to collecting, analyzing, and interpreting information on the need for, implementation of, and effectiveness and efficiency of intervention efforts to better the lot of humankind by improving social conditions and community life" (Rossi & Freeman, 1985, p. 13). There are many reasons for conducting evaluations: "for management and administrative purposes, to assess the appropriateness of program changes, to identify ways to improve delivery of interventions, or to meet the accountability requirements of funding groups" (Burstein, Freeman, & Rossi, 1985, p. 38). "For all these purposes, the key goal is to design and implement an evaluation that provides a firm assessment, one that would be unchanged if the evaluation were replicated by the same evaluators or conducted by another group" (Burstein, Freeman, & Rossi, 1985, p. 38). In this study, the evaluation will be distinguished by the concept of monitoring. Monitoring of program implementation is one of three major classes of evaluation research and is characterized by "an assessment of whether an intervention is (1) operating in conformity to its design, and (2) reaching its specified target population" (Burstein, Freeman, & Rossi, 1985, p. 14).

Considering my research questions and purpose, my focus and interest is in the revised physical literacy assessment tool. The sites where I am conducting my research

are simply the vehicles in which the tool is delivered, and help me to determine what is effective or ineffective about the site to enhance the implementation of the tool, and whether the tool holds its own across multiple recreational programs. In this way, physical literacy can be considered the program, which I intend to evaluate using the revised Physical Literacy Pathway Tool.

Unit of Analysis

Purposeful sampling. Whitney and Trosten-Bloom (2010) assert that the people most significantly impacted by research should be considered the most informative group. Correspondingly, Creswell (2007) and Merriam (1988) assume that purposive sampling aligns with the researcher's goal to discover, understand, and gain insight by selecting a sample from which they can learn the most.

Purposive sampling will be the most advantageous technique for acquiring an appropriate sample because both the Brock Niagara Penguins and the Easter Seals Ontario provide programs and services to children and youth with physical disabilities; whom Rossi and Freeman (1985) refer to as the group that will be subjected to the intervention immediately (the direct targets). Some of these programs and services include offering participants recreational and competitive sporting opportunities, as well as summer camp; assisting with the purchase of costing mobility equipment; and providing access to information and resources to educate the public and increase awareness (About, 2015; Our Commitment, 2014). The Brock Niagara Penguins offers 3 programs for participants: wheelchair basketball, swimming, and boccia. Wheelchair basketball is a competitive program that practices once a week for two hours from September to April, and competes in approximately three tournaments throughout the

season. During practices, coaches and Brock student volunteers lead participants through activities and drills. At the end of each practice, participants play in a "house league" with their respective team.

Secondly, swimming is a competitive program that takes place once a week for an hour at the Eleanor Misener Aquatic Centre. Participants are partnered with a Brock student volunteer who helps to facilitate the swimming activities created by the head coach. Practices are designed to improve swimming (stroke) technique and endurance, and overall confidence in the water.

Thirdly, Boccia is a recreational program designed exclusively for participants with severe physical disabilities (i.e., quadriplegia). The Boccia teams practice once a week for an hour from September to April in the main gymnasium at the Niagara Children's Centre. Participants are instructed by Brock student volunteers to develop sending skills using apparatus (ex. ramps) to compete in the sport.

At Easter Seals Camp Merrywood, participants expand their leadership abilities through a myriad of creative arts programs and multi-sports activities. During the summer, the camp has one 7-day Sports Camp where participants can take part in a variety of sports, including a full waterfront program with activities such as sailing, kayaking, canoeing, and fishing.

The participants within each of these organizations are best suited for the purposes of my research because they permit maximum variation to represent multiple perspectives about the phenomenon under study (Creswell, 2007). I also am hopeful that the Brock Niagara Penguins and Easter Seals Ontario will play an important role in

providing support to develop physical literacy in children and youth with a physical disability in a familiar and comfortable recreational setting.

Gaining entry. Rossman and Rallis (2003) refer to the 'gatekeeper' as the people in settings who control avenues of opportunity, as well as the initial step to entering the research setting. It is necessary for the researcher to gain access into these settings, especially if he or she would not otherwise have access as a member of the public.

Notably, I was actively involved with the Brock Niagara Penguins as a Program Coordinator and swim coach for 3 years. In this time, I have been able to nurture a positive rapport with the Board of Directors, volunteers, coaches, and the athletes and their parents who have registered in the programs year to year. However, I did not have any prior involvement with Camp Merrywood, so it was imperative to contact the Camp Director, Barb Grey, to enter the setting. Fortunately, Dr. Mandigo and his wife, Karen, visit Camp Merrywood every summer with their family to administer sports programming and were vital in facilitating a dialogue between Ms. Grey and I. Therefore, entering Camp Merrywood was not an impediment to overcome.

Participants. The Brock Niagara Penguins and Camp Merrywood have established specific eligibility criteria for children and youth attending their programs. The Brock Niagara Penguins is a program for individuals with a physical disability, aged 6 years and up. The specific program requirements are that Boccia athletes will have a severe physical disability; wheelchair basketball athletes will have a physical disability with the ability to propel themselves sufficiently in a sport wheelchair; and swim athletes will have a physical disability and be comfortable in the water (Register, 2015).

Each camper attending Camp Merrywood had to be registered with Easter Seals Ontario and be aged 6 to 26 as of July 1, 2015; can make choices, follow directions, and be aware they are participating in a recreational program; have the physical and mental stamina to participate in a challenging outdoor program; and have a desire to fully participate in the daily activities of camp (General Information & FAQ, 2014). Beyond this, campers had to have no recurring history of problems with respiration, swallowing, or choking; have a well-established communication system (verbal or augmentative) that allows for effective peer and staff interaction; can communicate in a consistent yes and no (verbal or non-verbal); and can comprehend their own needs, ask for assistance when necessary, and indicate when they are in distress (General Information & FAQ, 2014).

Therefore, the participants required for this study were between the ages of 7 and 24 years, and retained a physical disability that affects his or her mobility or dexterity. This includes, but is not limited to, those with Cerebral Palsy; those who have lost limbs; or those who require slight adaptations because of the shape of their body to participate fully in society. Additionally, the participants may have used an assistive device (i.e., wheelchair, cane, walker). The participants demonstrated a high level of function so that they could comprehend the concepts used in this study, and respond intelligibly to interview questions. These individuals either lived in the Niagara Region, approximately within a 50km radius of Brock University, or attend the Easter Seals Ontario Camp Merrywood, located in Perth, Ontario.

This research also required up to five experts in the field of Adapted Physical Activity (APA) to review the revised physical literacy tool. These participants must self-identify as an expert in APA provided that they hold a graduate degree or professional

certification in disability studies and/or physical education, and can be selected from Ontario. It is also advantageous to have these experts presently working or researching in the field of APA, or retain a disability.

Recruitment. The recruitment process began by contacting each organization, the Brock Niagara Penguins and Easter Seals Ontario, through email. The purpose of this email was to provide the Directors with an organizational consent form (Appendix J). Once consent was received from the organizations, Program Managers (i.e., coaches, instructors, or leaders) were identified by the Directors so that they could assist me when I arrived at each site. Both the Directors and the Program Managers were the gatekeepers to the child and youth participants required for this study, and they helped to maintain an open line of communication between myself and the participants.

The participant recruitment process differed slightly for each organization. Per the permission obtained in the letter of approval from Easter Seals Ontario (Camp Merrywood), I set up a booth on Arrival Day at Camp Merrywood. Potential participants and/or parents/guardians who wished to be involved in the study were instructed by the Program Managers to stop by the booth to discuss the particulars of involvement in the study and address any questions or concerns. Then, consent forms (Appendix K) and minor assent forms (Appendix L) were distributed to the potential participants and completed as they saw fit. Participants were asked to complete either a consent form or minor assent form, or have their parents/guardians complete the consent form (Appendix M) on their behalf.

By comparison, recruitment with the Brock Niagara Penguins took place directly. I arranged to meet with potential participants and their parents/guardians during one of

the organized practices to discuss the particulars of involvement in the study and address any questions or concerns. Then, consent forms and minor assent forms were distributed to the potential participants and completed as they saw fit. Participants were asked to complete either a consent form or minor assent form, or have their parents/guardians complete the consent form on their behalf.

Adapted Physical Activity (APA) experts will be recruited through Brock University's Faculty of Applied Health Sciences, as well as through the 2015 International Physical Literacy Conference in Vancouver (June). I contacted the experts via email with an information letter (Appendix N) and consent form (Appendix O). Once consent was received, the experts were sent the revised physical literacy assessment tools (i.e., Physical Literacy Pathway Tool, PLAY*Self*, and PLAY*Inventory*) and a questionnaire (Appendix P) which to respond electronically. However, the experts may have requested a hard copy of the assessment tools and questionnaire. This was indicated on the consent form, and in this case, hard copies were delivered via Canada Post.

Evaluation Plan

Physical literacy assessments. The physical literacy assessments were conducted in two phases. In the first phase, I administered an initial assessment of each child/youth participant's level of physical literacy using the Physical Literacy Pathway Tool, PLAY*Self*, and PLAY*Inventory*. The Physical Literacy Pathway Tool assesses the following 6 movement skills reflective of physical literacy: (1) Traveling; (2) Coming to a Stop; (3) Sending; (4) Receiving; (5) Lift and Lower; and (6) Dynamic Balance. PLAY*Self* is a short survey completed by the child/youth participant, while PLAY*Inventory* is a survey in which the child/youth participant reports the types of

physical activities they regularly participate. The results of the assessment were recorded electronically and secured on a password protected USB device and locked in an office at Brock University. The first phase occurred in weeks 3-4 for the Brock Niagara Penguins and Days 2-3 at Camp Merrywood.

Then, I administered a follow-up assessment of each participant's level of physical literacy using the same assessment tools (Physical Literacy Pathway Tool and PLAY*Self*). The purpose of this assessment was to determine whether the participants' results were comparable to the initial assessment. Again, the results of the assessment were recorded electronically and secured on a password protected USB device and locked in an office at Brock University. The first phase occurred in weeks 7-8 for the Brock Niagara Penguins and Days 5-6 at Camp Merrywood.

The total time to administer each phase of physical literacy assessments was approximately 1 hour.

Semi-structured interviews. Yin (1994) states that the interview is one of the most important sources of case study information. It is an attempt "to understand the world from the participants' points of views, to unfold the meaning of peoples' experiences, to uncover their lived world prior to scientific explanations" (Kvale, 1996, p. 1). Following each assessment, I engaged the participants in interviews that are semi-structured in nature. This semi-structured approach to interviewing is characterized by openness and flexibility, with "many on-the-spot decisions" about when to probe the participant for further information (Kvale, 1996, p. 84; Markula & Silk, 2011). Kvale (1996) further identifies this type of interview as a specific form of conversation, through

which Rubin and Rubin (1995) maintain that interviewees are treated as partners rather than objects of research.

The purpose of these semi-structured interviews was to interpret the participants' meanings of physical literacy through examining two assessments of their levels of physical literacy. The interview questions were developed within the context of my proposed research questions, and I refined the interview procedures with a pilot test (Creswell, 2007). Yin (2003) also recommends a pilot test to improve data collection plans and develop relevant lines of questions.

Participants were eligible for the interview if: they provided consent or their parents/guardians provided consent (in the case of minors or not able to give consent themselves); they could express themselves verbally; and attended their respective physical activity programming on a regular basis. Parents/guardians had the option to be present during the interview, and all interviewees were shown the interview questions beforehand. The interviews were recorded using an audio device and transcribed verbatim (Taylor & Bogdan, 1998). If further accommodations were necessary, I allowed participants to see the questions during the interview and they had the option of writing or illustrating their responses. Also, I repeated the questions multiple times to enhance understanding, and gave the participants breaks after every few questions. If a parent/guardian was present, he/she could assist with the comprehension of the interview questions.

The first interview (Appendix Q) occurred after the baseline assessment of the level of physical literacy in the participants: week 5 for the Brock Niagara Penguins, and Days 3-4 at Camp Merrywood. Per the recommendations of Rubin and Rubin (1995), this

interview was structured as a guided conversation and served as interpersonal scaffolding, deepening the interview relationship to achieve a wholesome understanding of participants' levels of physical literacy. In the second interview (Appendix R), after the second observation phase, participants described their improvement in their level of physical literacy, as well as positive and negative impressions of the assessment tool. This occurred in week 9 for the Brock Niagara Penguins and Days 5-6 at Camp Merrywood. All interviews took place in a quiet location, free from distractions, for one to one and a half hours (Creswell, 2007).

Yin (1994) cautions researchers to report situations and insights through the lens of the interviewees as best as possible, and to consider interviews as "*verbal reports*" only (p. 85). As such, they are subject to the common problems of bias, poor recall, and poor or inaccurate articulation (Yin, 1994). To moderate these incidences, Yin (1994) recommends verifying interview data with information from other sources, such as observational data. In my study, I recorded retrospective notes following each assessment and interview and referred to them when I transcribed each interview and again when I began my analysis.

Data Analysis

Braun and Clarke (2012) advocate that thematic analysis has become an increasingly popular method of qualitative analysis that is both accessible and flexible; allowing the researcher to focus on the data in many ways. It is defined as "a method for systematically identifying, organizing, and offering insight into patterns of meaning (themes) across a data set" (Braun & Clarke, 2012, p. 57). Through focusing on meaning

across a data set, “thematic analysis allows the researcher to see and make sense of collective or shared meanings and experiences” (Braun & Clarke, 2012, p. 57).

My analysis strategy adopted Braun and Clarke’s (2006) six steps to thematic analysis (Table 1). I began with an inductive strategy in which emerging themes were first identified before the guided analysis was conducted. Using inductive analysis in the early stages of qualitative research “emphasizes the importance of being open to the data” and becoming aware of new, emergent categories or patterns that have yet to be labeled (Patton, 2002, p. 453-454). Given that I was working with verbal data, the first step in the process (transcription) was an excellent way for me to familiarize myself with the data (Braun & Clarke, 2006). This process is arguably an “interpretive act” (Lapadat & Lindsay, 1999 in Braun & Clarke, 2006, p. 88), where meanings are created, and is relevant to the inductive segment of my analysis. Once I read through the interview transcripts to establish a sense of the ideas and tone of those ideas (Cresswell, 2007), I created an initial list of ideas, or codes, about what is in the data and what is interesting about them (Braun & Clarke, 2006). Miles and Huberman (1994), Tuckett (2005), and Boyatzis (1998) support coding to organize the data in a meaningful way regarding the phenomenon. From the verbal accounts, I extracted content that appeared fascinating to me and assigned a code (e.g., Participant interpretation of Physical Literacy), or multiple codes, that referred to the “most basic segment, or element, of the raw data” (Boyatzis, 1998, p. 63 in Braun & Clarke, 2006, p. 88). The codes were produced using Dedoose: a web application for mixed methods research developed by academics at the University of California, Los Angeles (UCLA). It is possible that the use of this application could influence the authenticity of the study’s findings, given its deductive nature. This means

that by theorizing that everyone, regardless of ability, can be physically literate, I should be able to predict what the observations should be if this theory was correct. This reasoning, therefore, might have hindered the effectiveness of Dedoose to accurately represent the findings in this study.

Once this step was complete, I sorted the 71 codes into potential subthemes (e.g., Pleasure), before grouping them into themes (e.g., Awareness and Understanding of Physical Literacy) (Braun & Clarke, 2006). This step encouraged me to re-focus the analysis to determine how different subthemes could be combined to form higher order themes. I employed a semantic approach, which Braun and Clarke (2006) describe as "the themes that are identified within the explicit or surface meanings of the data" (p. 84). To enhance study rigour, the fourth step involved reviewing subthemes and themes with a second trained coder: Dr. Mandigo. Together, we explored whether the themes worked in relation to the data (Braun & Clarke, 2006). It was determined that I had initially created too many codes and consequently had to discard some codes or relocate them under another theme (Braun & Clarke, 2006). These refinements aided in capturing the most important and relevant elements of the data in relation to my research question and permitted me to move onto the next step of analysis (Braun & Clarke, 2006). In the fifth step, I finalized subtheme labels so that "each extract would provide a vivid, compelling example that clearly illustrates the analytic points I am making" (Braun & Clarke, 2012, p. 67). This process involved a progression from simply describing the data to show patterns in semantic content to interpretation, where there is an attempt to speculate the significance of the patterns and their broader meanings and implications (Braun &

Clarke, 2006, p. 84). The sixth and final step, 'writing the report,' was accomplished by writing this dissertation (Braun & Clarke, 2006).

Table 1: Phases of Thematic Analysis (Braun & Clarke, 2006, p. 87)

Phase:	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the date, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Furthermore, Glesne (2006) advocates for early data analysis and for researchers to "consistently reflect on their data; work to organize them; and try to discover what they have to tell" (p. 148). During and following the data collection process, I recorded observations, comments, and queries that I used to assist in the coding of units and emergence of themes.

I recorded the data collected from the two phases of physical literacy assessments (Physical Literacy Pathway Tool, PLAY*Self*, and PLAY*Inventory*) in an Excel document. Following Phase One of the study, I inputted the competency results (i.e., initial,

emerging, competent, or proficient) for the 6 movement tasks for each participant, as well as made note of their mobility aid and equipment preferences, number of practice trials, and any additional observations documented at the time of the assessment. On a separate Excel spreadsheet, I transferred the information from the participants' PLAY*Self* assessment and PLAY*Inventory*. Once Phase Two was completed, I repeated this process. However, the participants only completed PLAY*Inventory* once.

Ethical Issues

Ethical clearance for this research study was awarded by the Brock University Research Ethics Board, file # 14-239 (Appendix S).

Potential risks. The movement activities used in this study pose no greater risk of physical injury than what would have already been present in existing activities and uses of the PLAY Tools by the Brock Niagara Penguins or Easter Seals Ontario (Camp Merrywood). In case of injury, the protocols and policies of the sport/physical activity organization will be followed. This includes referral to appropriate medical care if necessary.

When conducting research with human participants, there is the risk that they will feel obliged to take part in this study because of the relationships between my faculty supervisor, the consenting organizations, and myself. Given that I am Dr. Mandigo's graduate student, participants may feel pressured to take part in this study. To address this, I ensured that the purpose of my research is clear: I want to better understand the level of physical literacy in children and youth with physical disabilities. I also ensured that the participants know their participation is voluntary, and that their assessments of physical literacy will in no way affect their involvement in their respective programs.

Furthermore, there was an option on the Participant Consent Form to withdraw from the study at any time. If participants chose to exercise this right, their personal information and any data collected on their behalf would be destroyed appropriately.

If the participants experienced feelings of embarrassment or distress, I stopped the physical literacy assessments or interview to relieve the participant. I reminded the participant that his/her participation is voluntary, and that it would not affect his/her involvement in their respective program. I also encouraged the participants to speak to their parent/guardian or another trusted adult, and provided the number for Kids Help Phone to use at their discretion.

Another calculated risk present in this study is the hierarchical nature of the interview process (Glesne, 2006). Fontana and Frey (1994) state,

> … the emphasis is shifting to allow the development of a closer relation between interviewer and respondent, attempting to minimize status differences and doing away with the traditional hierarchical situation in interviewing. Interviewers can show their human side and answer questions and express feelings. (370)

Glesne (2006) asserts that this hierarchical relationship depends on the research purpose, topic, and the desires of research participants. Merriam (1988) also points to the participants involved in qualitative interviewing, saying that what they believe they are doing, and what in fact they are doing, may create discrepancies. Revealing these discrepancies increases the risk of creating personal and political conflict (Merriam, 1988).

Potential benefits. It is anticipated that this type of research will help provide a better understanding of the levels of physical literacy in children and youth with physical

disabilities in sport and recreational settings. Beyond this, it will help to understand how to improve or enhance physical literacy initiatives through quality assessment and programming. Furthermore, this study will serve as a pilot through which to validate the use of a physical literacy assessment tool for children and youth with physical disabilities, and ultimately, for mixed abilities.

More explicit benefits exist for each of the participants. The assessments can provide each organization with a better understanding of how the levels of physical literacy among children and youth with physical disabilities in sport and recreation can be improved and/or enhanced through quality assessment and programming, as well as increase enrollment in sport and recreational programs. Child/youth participants can develop physical competence, confidence, and self-esteem; confidently participate in a wide variety of purposeful physical pursuits; and reflect realistically on personal strengths and select appropriate, purposeful physical pursuits in which to take part. Program Managers can enhance their understanding of physical literacy; develop program opportunities to improve physical literacy and consequently, create more employment opportunities; and help to ensure that physical literacy elements are integrated into programs and curricula.

Confidentiality and anonymity. Participants' personal information was kept strictly confidential and names were replaced with a pseudonym. Only Dr. Mandigo and I had access to the pseudonyms and corresponding names. This is required to match pre- and post-data. After all the data had been collected, the list of pseudonyms and corresponding names was destroyed.

Further, the data was stored on a password protected portable USB device and secured in a locked cabinet within a locked office located at Brock University. Dr. Mandigo and I knew the lock combination. Once the data had been analyzed for the purposes of the research study, physical literacy assessments and interview transcripts were destroyed. As well, electronic data and audio recordings were deleted from their respective devices and disposed of appropriately.

Due to mandatory reporting laws, if incidences of child abuse or neglect occurred, we would have had to break confidentiality and report these incidents to the authorities.

Strategies for Enhancing Trustworthiness

The use of an interpretive paradigm for this study relies on the concept of trustworthiness as the evaluative standard for field research (Guba & Lincoln, 1994 in Bailey, 2007). "Trustworthiness requires conducting and presenting the research in such a way that the reader can believe, or trust, the results and be convinced that the research is worthy of his or her attention" (Guba & Lincoln, 1994 in Bailey, 2007, p. 181). Similarly, Patton's (2002) standards for enhancing quality and credibility of arise from a constructivist perspective. "Constructivists embrace subjectivity as a pathway deeper into understanding the human dimensions of the world in general as well as the specific phenomena they are examining" (Peshkin, 1988 in Patton, 2002, p. 546). The concept of trustworthiness possesses a set of evaluative categories, closely related and interdependent: credibility, transferability, dependability, and confirmability (Bailey, 2007; Patton, 2002). These categories offer perspective and encourage dialogue among perspectives rather than aiming at a singular truth and linear prediction (Patton, 2002, p. 546). Notably, social constructivists' findings and reports are explicitly informed by

attention to praxis and reflexivity. Reflexivity is analogous with confirmability and additional descriptions of this concept will saturate the information presented earlier in this chapter.

Credibility. Miles and Huberman (1994) denotes credibility as the "believability, authenticity, and plausibility" of results (in Bailey, 2007, p. 182). For the reader to judge the results as credible, the methods used to collect and analyze the data must be appropriate and rigorous, and the content of the final report must be show to have been derived from that data (Bailey, 2007, p. 182; Patton, 2002). This is achieved through what Patton (2002) suggests as the researcher's training, experience, and presentation of self. My experience in the Concurrent Education program at Brock University was significant in providing me with the theory and skills necessary to educate different populations and to make both accommodations and modifications to create inclusive activities, as well as in creating different opportunities to become involved in the community.

Additionally, I invested myself in the Brock Niagara Penguins for three years, and I consider myself an advocate for quality physical activity experiences for all. Throughout the course of my study, I engaged in rigorous methods for doing fieldwork, such as maintaining a persistent presence in each of my field settings and conducting continual observations, so that I yielded an abundance of high quality data to be analyzed. In this way, I identified patterns and themes, but also data that supported alternative explanations to my research questions. Patton (2002) argues that failure to find strong, supporting evidence for alternative ways of presenting the data or contrary explanations helps increase the confidence in the original, principal explanation generated (p. 553).

Yin (1994) agrees with this contention because analysis of rival explanations in case studies constitutes a form of rigor in qualitative analysis.

Triangulation. Denzin (1989) declares, "combining multiple observers, theories, methods, and data sources, researchers can hope to overcome the intrinsic bias that comes from single-methods, single-observer, and single-theory studies" (p. 307). This principle of triangulation is based on the premise that no single method ever adequately solves the problem of rival explanations (Patton, 2002, p. 555). Denzin (1989), Patton (2002), and Yin (2009) affirm that multiple methods of data collection and analysis provide more credibility by strengthening confidence in the conclusions drawn from the study.

I verified the consistency of my findings by engaging different sources of data (Yin, 2009). This means I "compared and crosschecked" the consistency of information derived at different times and by different means within qualitative methods (Patton, 2002, p. 559; Yin, 2009). Also, I used the Physical Literacy Pathway Tool in combination with retrospective observations and semi-structured interviews to test for consistencies (or inconsistencies), so that I offered deeper insight into the relationships between the inquiry approach and the phenomena under study.

Chapter IV – Findings

The findings presented in this chapter are derived from two data sets (i.e., Physical Literacy Pathway Tool assessments, including the PLAY*Self* and PLAY*Inventory* questionnaires, and semi-structured interviews). Adhering to Braun and Clarke's strategy for thematic analysis, I familiarized myself with each data set by noting revelatory phrases, key words, as well as the frequency and trends of Physical Literacy Pathway Tool scores, for the separate sets of data. I then developed clusters of patterns and or salience within each, and began to compare these patterns across the data sets. These initial findings speak to the potential for participants to be successfully included into society in a way that allows them to participate in the same way as their peer without disabilities (Dorsch, Richards, Swain, & Maxey, 2016).

Competency Results Using the Physical Literacy Pathway Tool

The first set of figures describe the participants' (n=13) competency results for each movement skill reflective of physical literacy: (1) Traveling; (2) Coming to a Stop; (3) Sending; (4) Receiving; (5) Lift & Lower; and (6) Dynamic Balance. The results were recorded for each phase of the physical literacy assessment using success criteria and a four-point rubric (Initial, Emerging, Proficient, Competent). It was found that the participants achieved consistent scores in the Traveling (Figure 2) and Receiving (Figure 5) tasks, but were the most successful in the Traveling task with all participants achieving scores in the acquired level. It appeared that Dynamic Balance (Figure 7) was particularly challenging for participants, in that their results were significantly dispersed throughout the levels of competency. Many participants scored proficient or competent in this task, however 15% of participants fell from the emerging level to the initial level from the

initial assessment to the follow-up assessment phase. Furthermore, Coming to a Stop (Figure 3), Sending (Figure 4), and Lift & Lower (Figure 6) illustrated minor fluctuations between the two assessment phases: in the Coming to a Stop task, 8% of participants achieved a higher competency score, but in the Sending and Lift & Lower tasks, 8% of participants scored a lower competency score in the follow-up assessment phase.

Figure 2: Pre and Post Traveling Results Using the Physical Literacy Assessment Tool

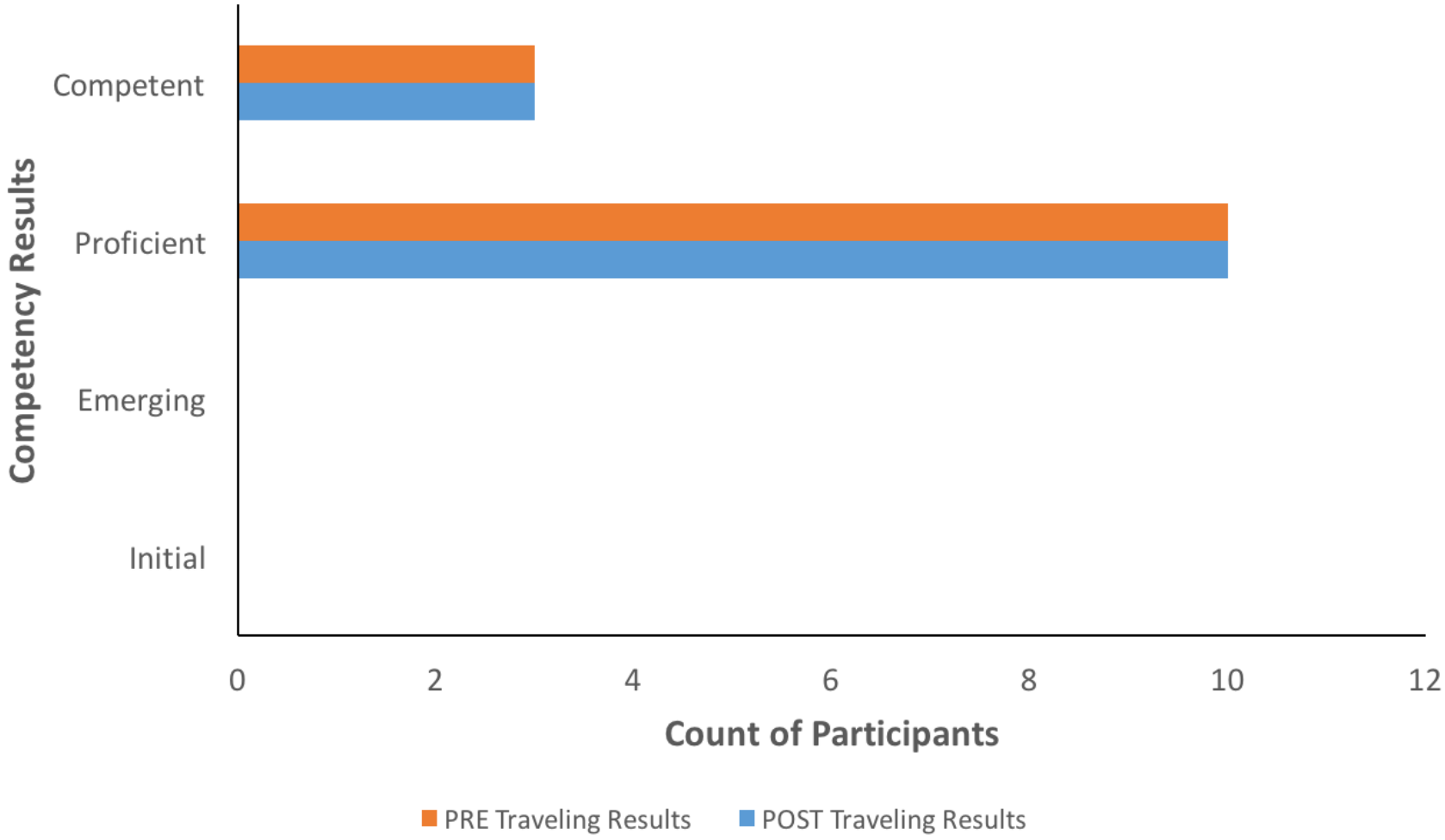


Figure 3: Pre and Post Coming to a Stop Results Using the Physical Literacy Assessment Tool

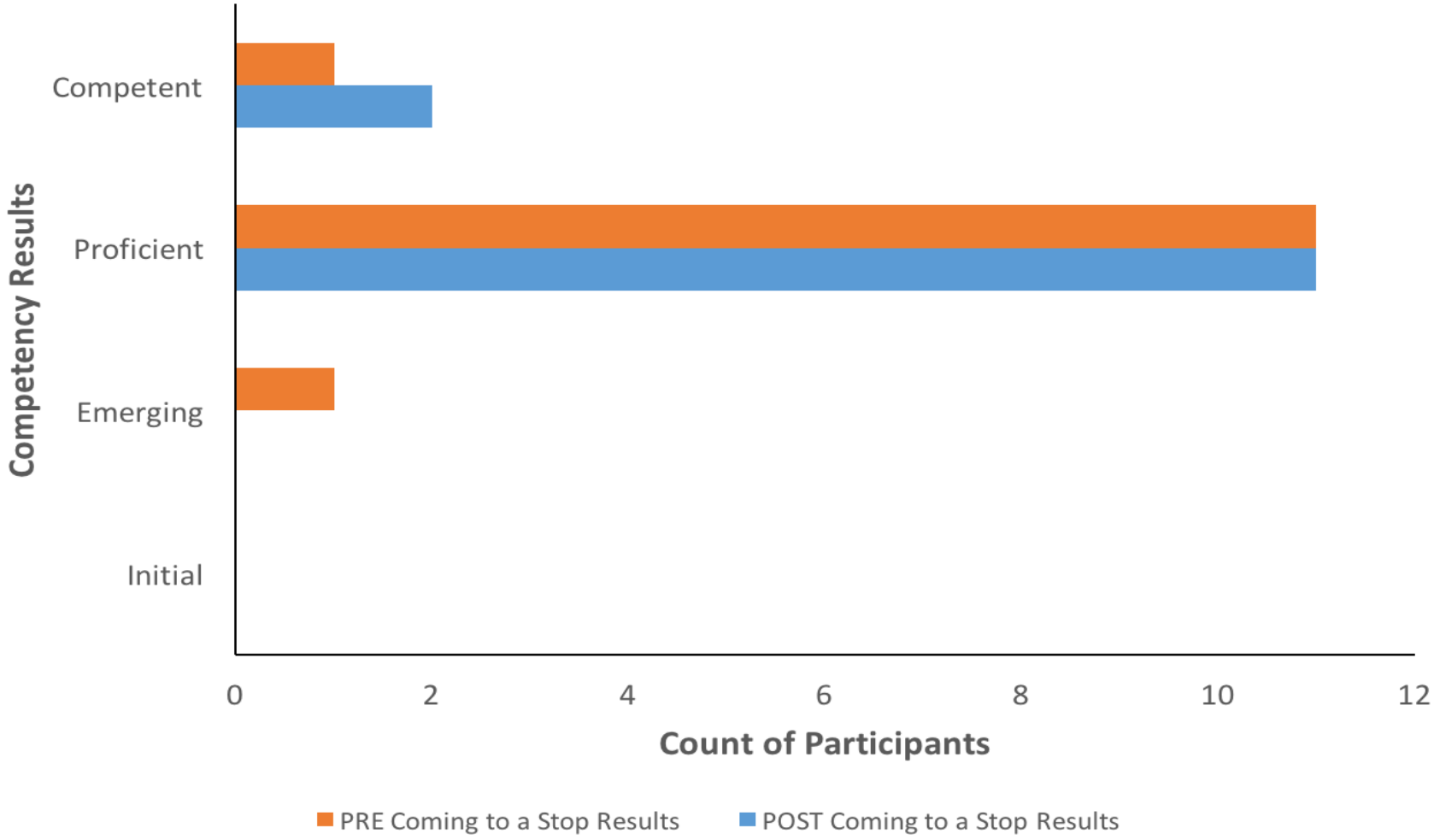


Figure 4: Pre and Post Sending Results Using the Physical Literacy Assessment Tool

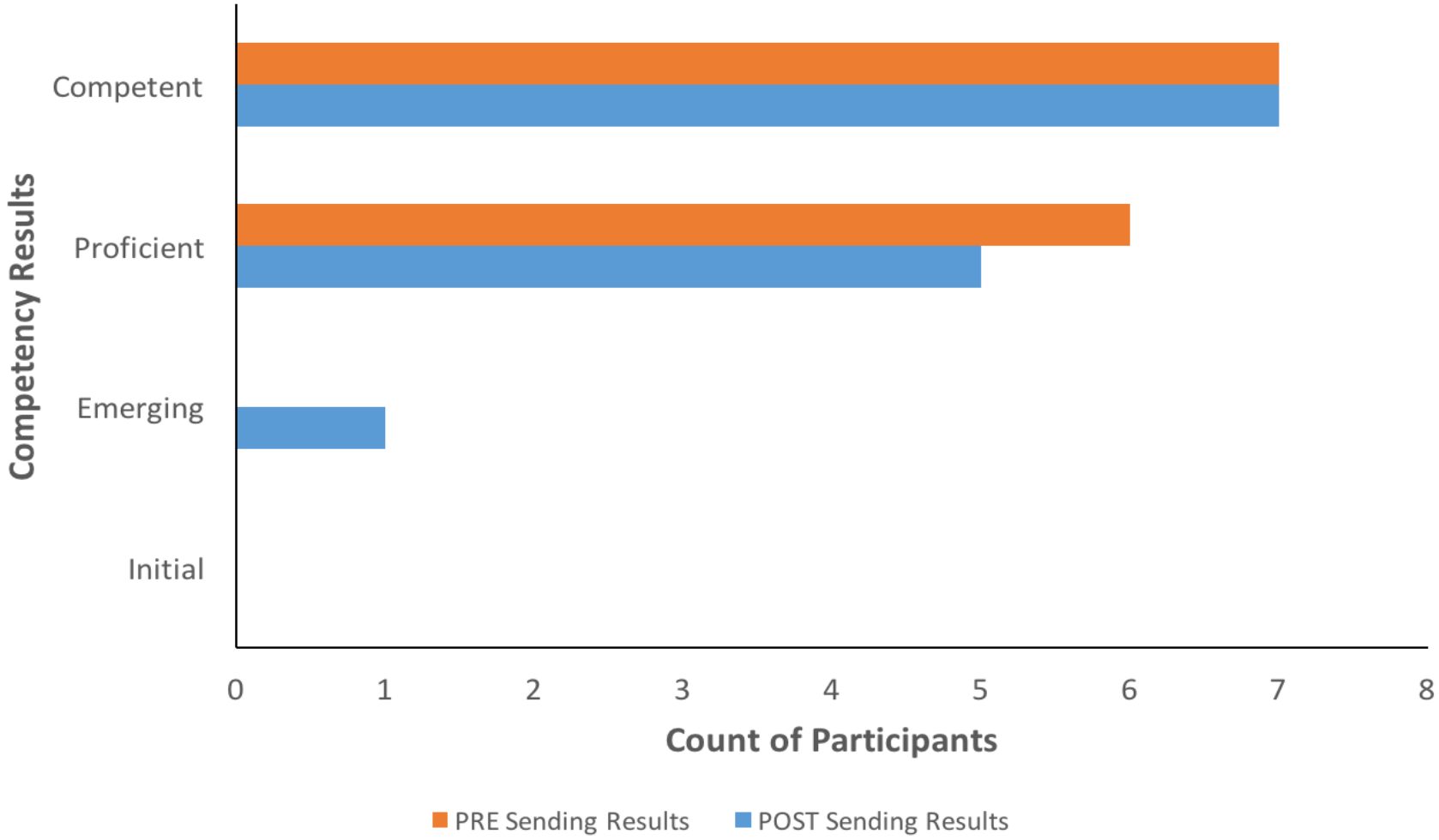


Figure 5: Pre and Post Receiving Results Using the Physical Literacy Assessment Tool

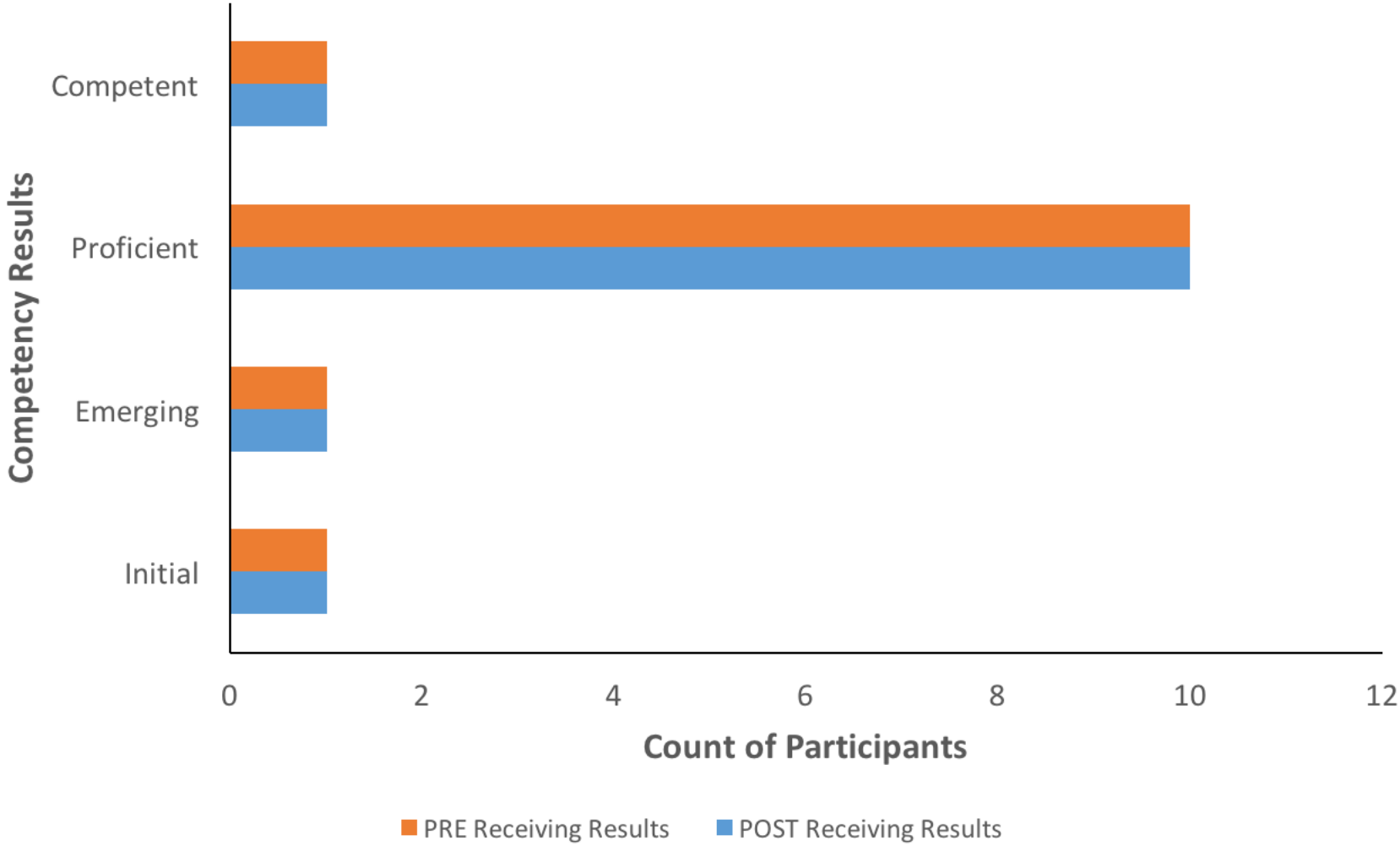


Figure 6: Pre and Post Lift & Lower Results Using the Physical Literacy Assessment Tool

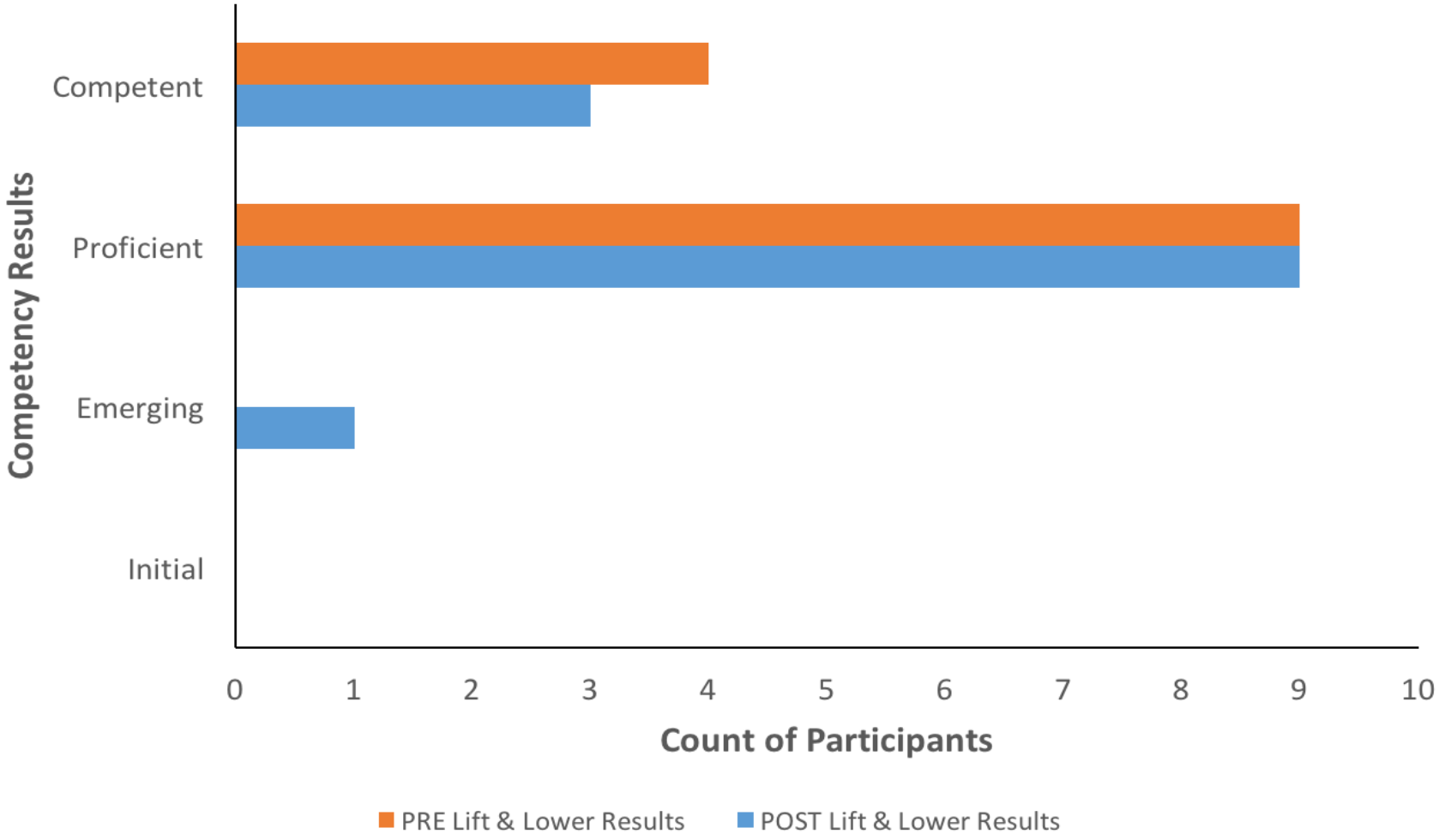
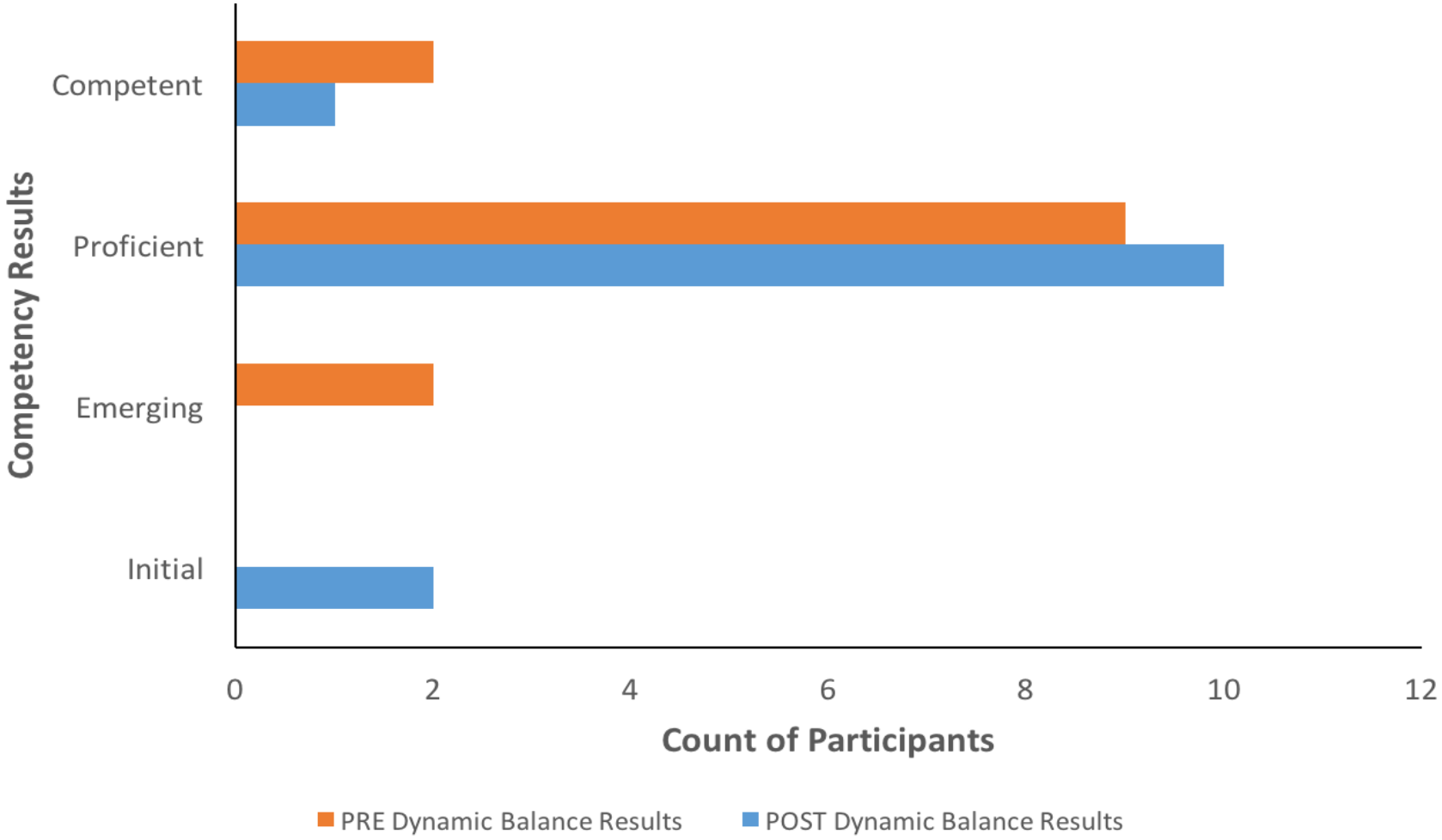


Figure 7: Pre and Post Dynamic Balance Results Using the Physical Literacy Assessment Tool



Average Scores of Individual PLAY*Self* Categories

The findings in Figure 8 were obtained from the participants' responses to the PLAY*Self* questionnaire. The PLAY*Self* Physical Literacy Score is the overall measure of the individual's self-perceived physical literacy. Once again, the results were recorded for each phase of the physical literacy assessment. A score sheet (Appendix G) was used to evaluate the participants' responses and determined their PLAY*Self* score per five categories: Environment, Physical Literacy Self-Description, Numeracy, Literacy, and Physical Literacy.

The Environment section helped to assess each participants' degree of confidence in most environments (e.g., land, water, ice, and snow) (Canadian Sport for Life, 2013). The following scale was used to score each answer provided by the participant in the Environment section: Never tried = 0; Not so good = 25; OK = 50; Very good = 75; a and Excellent = 100 (Canadian Sport for Life, 2013). If the participant placed a mark in either Excellent or Very good, he or she feels confident and able enough to participate in most environments (Canadian Sport for Life, 2013). Conversely, if the participant placed a mark in OK, Not so good or Never tried, he or she will need to improve their abilities in the specified environment(s) (Canadian Sport for Life, 2013).

The Physical Literacy Self-Description score is used to determine the participant's "self-efficacy; an individual's belief in their ability to succeed in any given situation, and how it relates to their participation in physical activity" (Canadian Sport for Life, 2013, p. 15). Comprehension of movement vocabulary, such as skip, jump and hop, in addition to adequate motor skill abilities and a safe and welcoming environment, will help an individual sustain the motivation to participate in physical activity (Canadian Sport for

Life, 2013). Therefore, the more they participate, the more confident they become. For all questions, except question 13, the following scale was used to score participants' answers: Not true at all = 0; Not usually true = 33; True = 67; and Very true = 100 (Canadian Sport for Life, 2013). For question 13, the following scale was used: Not true at all = 100; Not usually true = 67; True = 33; and Very true = 0 (Canadian Sport for Life, 2013). In the final section, the Relative Ranking of Literacies, participants rank the importance of reading, writing, arithmetic, and physical literacies per the following scale: Strongly disagree = 0; Disagree = 3; Agree = 67; and Strongly agree = 100 (Canadian Sport for Life, 2013). A literacy with a higher score means it is more relevant to the participant.

It was discovered that the participants had similar scores in each category. Notably, the participants ranked physical literacy the most relevant category in both assessment phases when compared to literacy and numeracy. As well, the participants reported a high physical literacy self-description, which improved by approximately 25 points in the follow-up assessment.

Average PLAY*Self* Scores According to Participants' Disability

To provide a more thorough analysis, I illustrated the PLAY*Self* findings according to participants' disability (Table 2 and Figure 9): Cerebral Palsy; Muscular Dystrophy; Physical Deformity; Spina Bifida; and Undefined. The participant with a physical deformity responded with the highest score in the environment category, followed by the participants with Cerebral Palsy. These individuals, in addition to the rest of the participants, described their levels of physical literacy between 700 and 900 points respectively. Per the PLAY*Self* workbook, a score between 900 and 1200 indicates that

the child has very high self-efficacy with relation to physical activity, while a score between 600 and 900 indicates that the child has relatively high self-efficacy with relation to physical activity. However, the individual who did not identify with the documented disabilities reported a significantly low physical literacy self-description when compared to the others: 500 points. This score indicates that the child has relatively low self-efficacy with relation to physical activity. I also found that all participants agreed that movement, activities, and sports are very important. This was confirmed by ranking physical literacy the most significant category in both assessment phases. Participants ordered literacy as the second most relevant category, followed by numeracy.

In Figure 9, I determined that the individuals who have Cerebral Palsy and Muscular Dystrophy reported the highest average total PLAY*Self* score in both the phases of the assessment, while those participants with Spina Bifida reported the lowest average total PLAY*Self* score in the initial assessment. To obtain this score, the totals from each subsection were added and then this value was divided by the total number of questions (27). A maximum score of 100 represents high self-perceived physical literacy. In general, however, this figure indicates that the participants have a relatively similar average total PLAY*Self* score in each assessment phase. The difference in these findings might be attributed to the participants' various levels of involvement in physical activity. Presumably, the participants with the higher average total PLAY*Self* score are both committed to and motivated by engagement in physical activity. As well, the differences in participants' motor function might affect their opportunity to engage in physical activity and consequently, their average total PLAY*Self* score.

Figure 8: Average scores of Pre and Post Individual PLAYSelf Categories

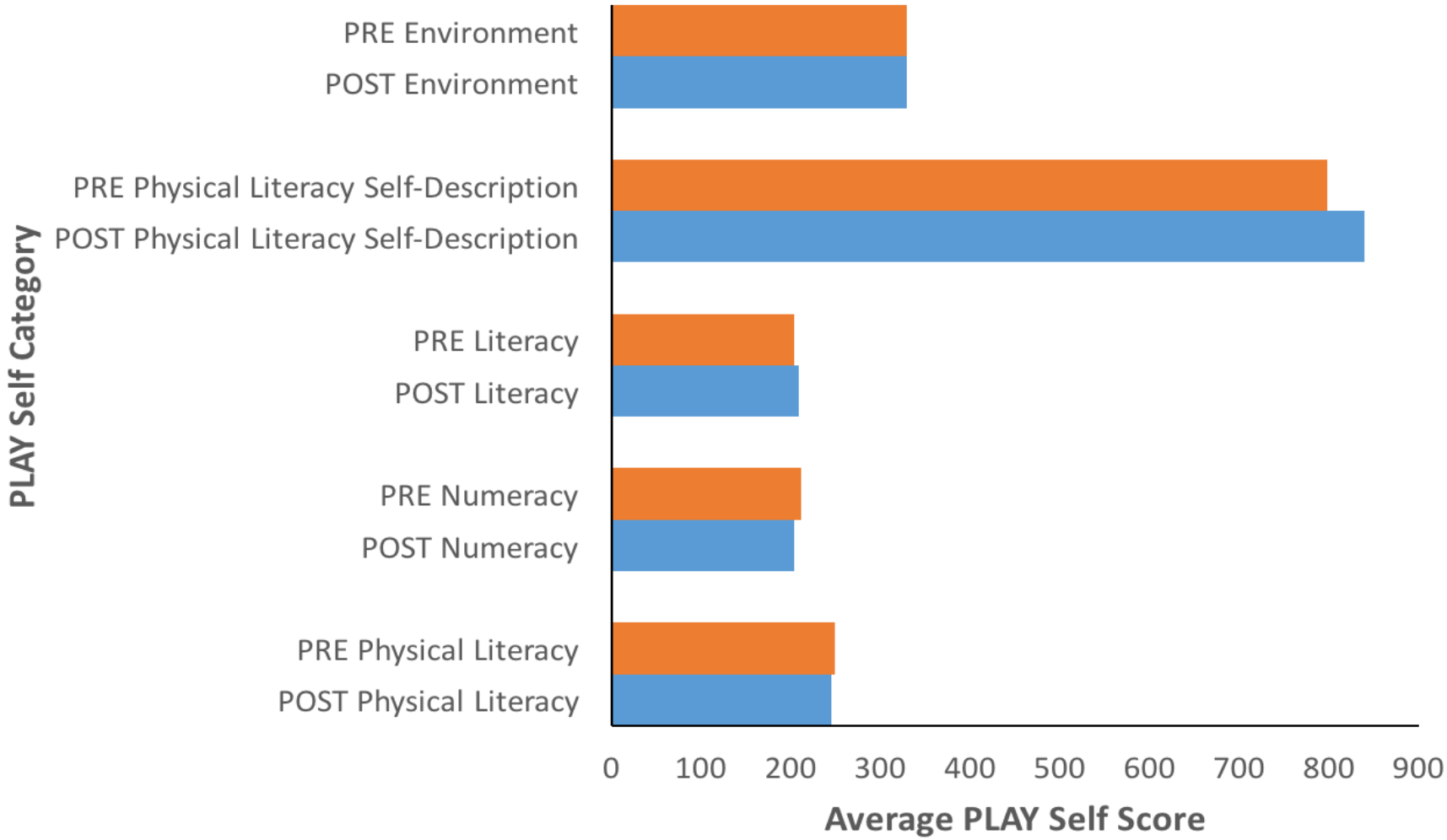
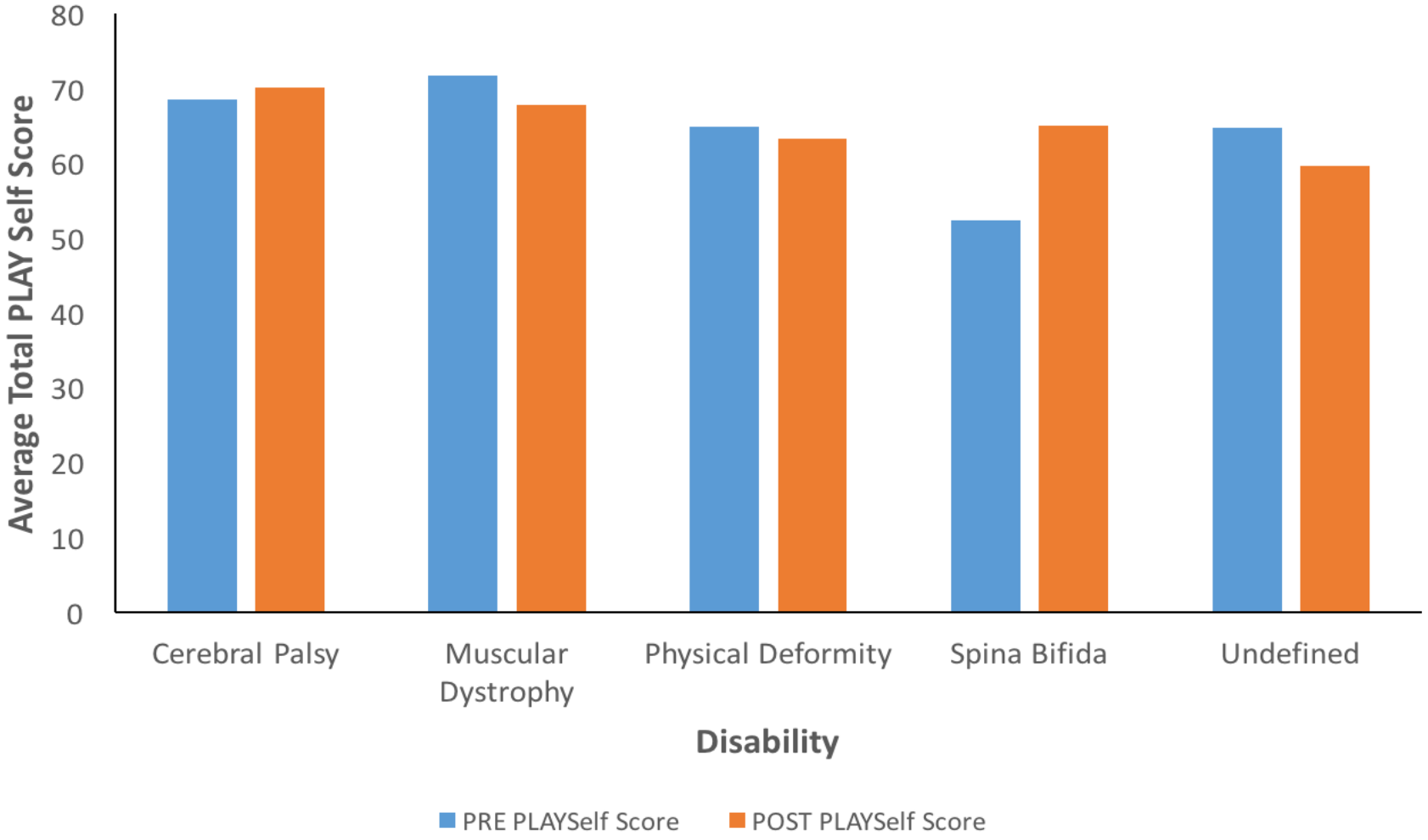


Table 2: Average scores of Pre and Post Individual PLAYSelf Categories According to Participants' Disability

	Sample Size	Environment		Physical Literacy Self-Description		Literacy		Numeracy		Physical Literacy	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Cerebral Palsy	5	363	367	867	889	189	194	167	194	267	250
Muscular Dystrophy	4	358	317	900	868	211	211	234	223	233	212
Physical Deformity	1	350	375	701	701	234	201	233	166	234	267
Spina Bifida	2	163	238	635	885	167	201	250	184	201	251
Undefined	1	350	275	499	500	300	300	300	267	300	267

Figure 9: Average Total PLAYSelf Scores According to Participants' Disability



Participants' Response to Regular Activity Participation During Leisure Time

Figure 10 examines participants' responses from the PLAY*Inventory* questionnaire; a list of 96 activities to which the participants identify whether they have regularly participated in the activity over the last twelve months. In this case, regular participation refers to activity sustained outside of school or work. To begin, I classified each activity according to where it takes place: in the gym; in and on water; outdoors; on the ice, indoors (other than gym); on snow, or if the activity is sedentary (e.g., homework or playing video games).

I discovered that 65% of the participants have regularly participated in a sedentary activity in the last year; the largest percentage in all the classifications. I also noted that activities on ice (9%) or in the gym (14%) were not common for participants, while the same proportion of participants attested to taking part in activities outdoors (18%), in or on water (24%), and on snow (21%). A greater number of participants said they participate regularly in indoor activities (36%), in a space other than a gymnasium, such as a bowling alley or using a home exercise DVD/CD.

Most intriguing, but not surprising, is that each activity classification has less than 40% of regular participation. This is a difference of approximately 30% of the proportion of participants who engage in sedentary activities.

Participants' Response to Regular Activity Participation During Leisure Time According to Disability

Figures 11 through 17 further examine participants' responses from the PLAY*Inventory* questionnaire according to their disability. My initial analysis revealed that participants, regardless of their disability, spent the least amount of time partaking in

activities on ice (20%) or in the gym (25%), but indicated that most participants were engaged in outdoor activities (e.g., baseball, cycling, or walking) or in those that did not require a gymnasium. I also observed that the individual whose disability is undefined participated the most consistently in all the activity classifications. On the contrary, participants with Cerebral Palsy and Spina Bifida were found to have the lowest frequency of participation in all the activity classifications.

Predictably, all the participants reported high levels of engagement in sedentary activities, such as watching TV, playing a musical instrument, or crafts. More specifically, participants with a physical deformity or whose disability is undefined spent the most time in a sedentary activity (85%). However, it is important to be aware that these results are not conclusive because the sample size did not represent an equal number of participants' disabilities, or a broad enough spectrum of the severity level or motor function within each disability classification (e.g., mild; moderate; severe; or Spastic Cerebral Palsy) (refer to Table 2).

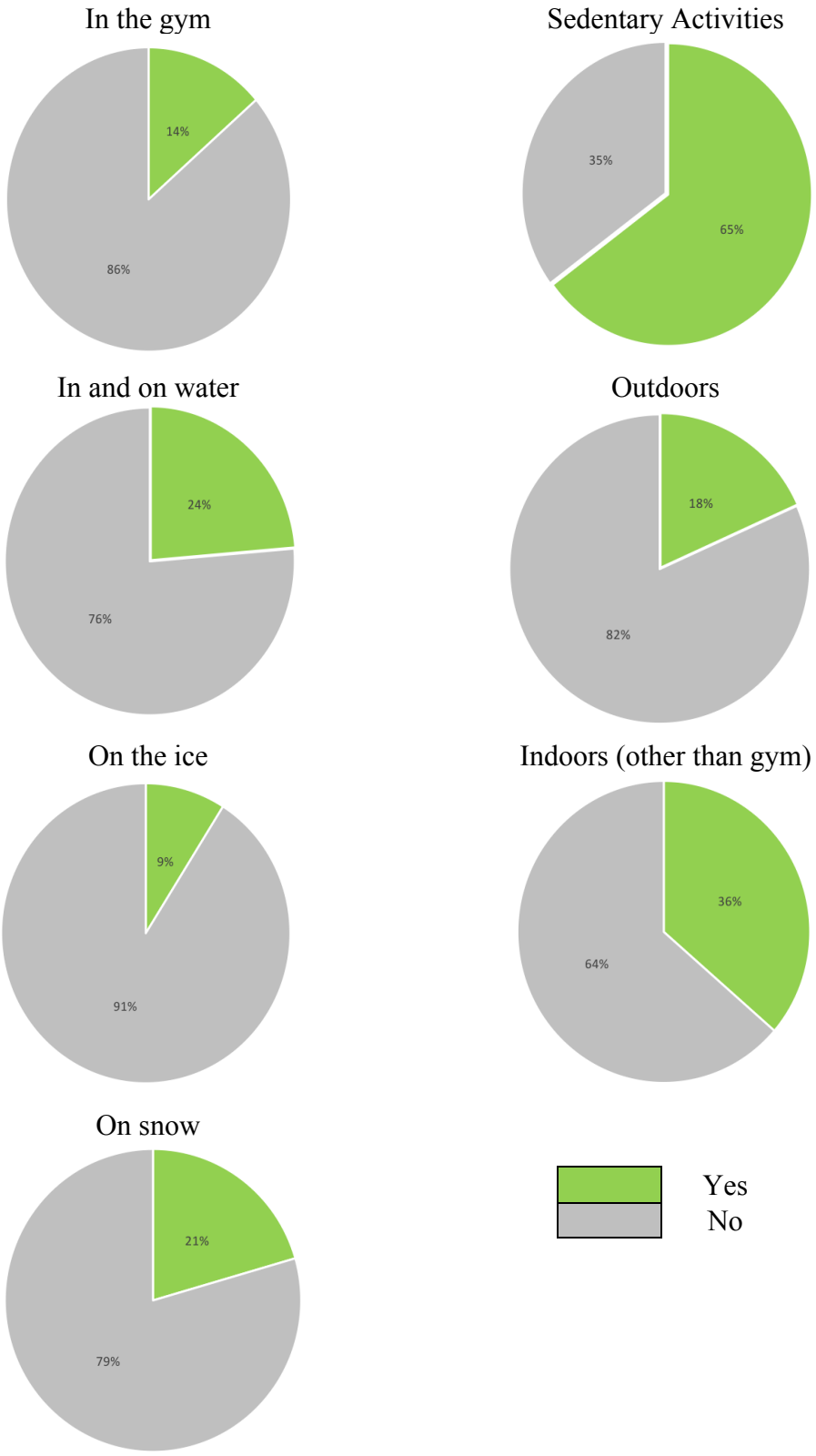


Figure 10: Proportion of Participants' Response to Regular Activity Participation During Leisure Time Over the Past 12 Months

Figure 11: Percentage of Participants' Response to Regular Activity Participation In the Gym During Leisure Time Over the Past 12 Months According to Participants' Disability

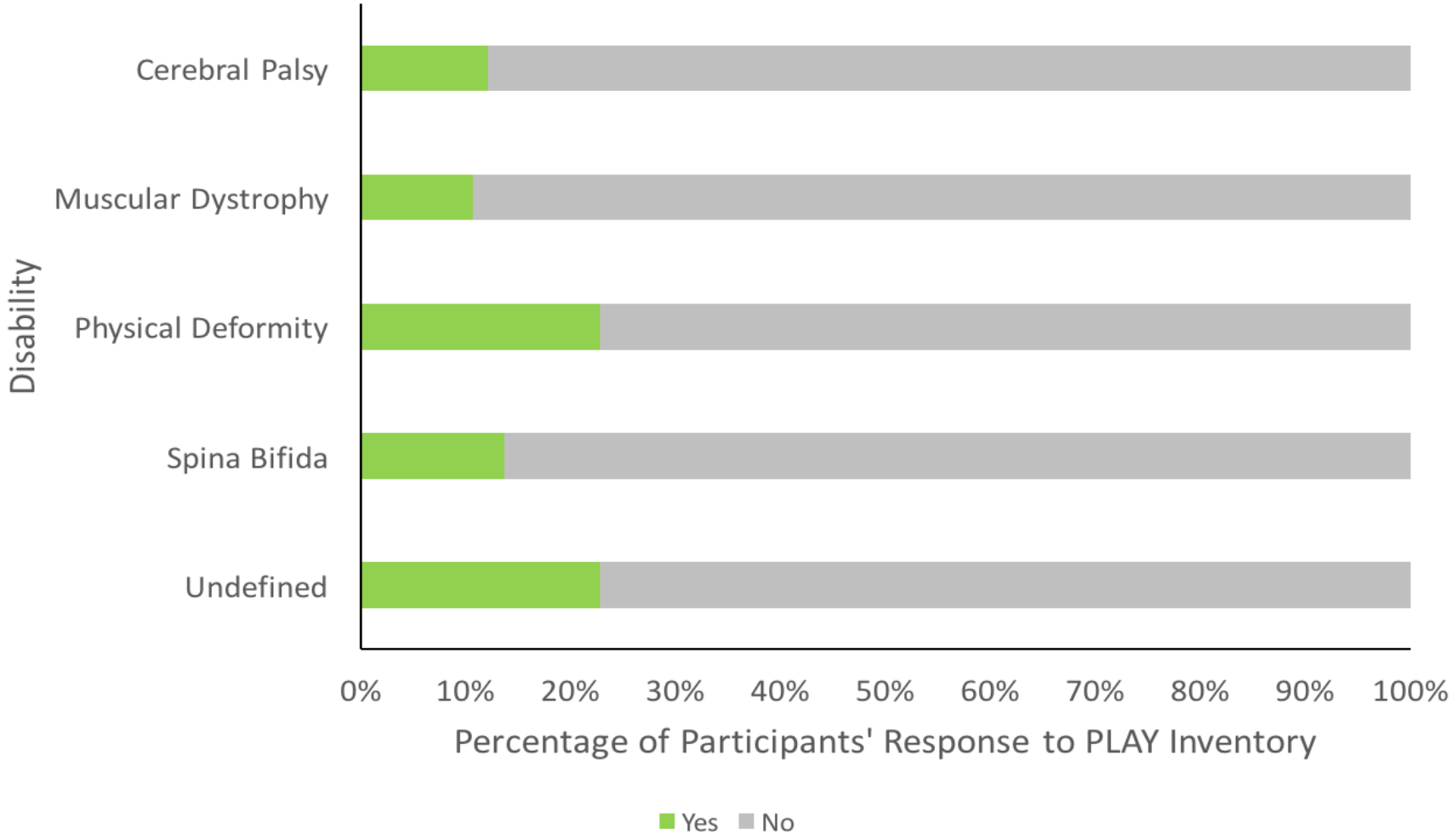


Figure 12: Percentage of Participants' Response to Regular Activity Participation In and On Water During Leisure Time Over the Past 12 Months According to Participants' Disability

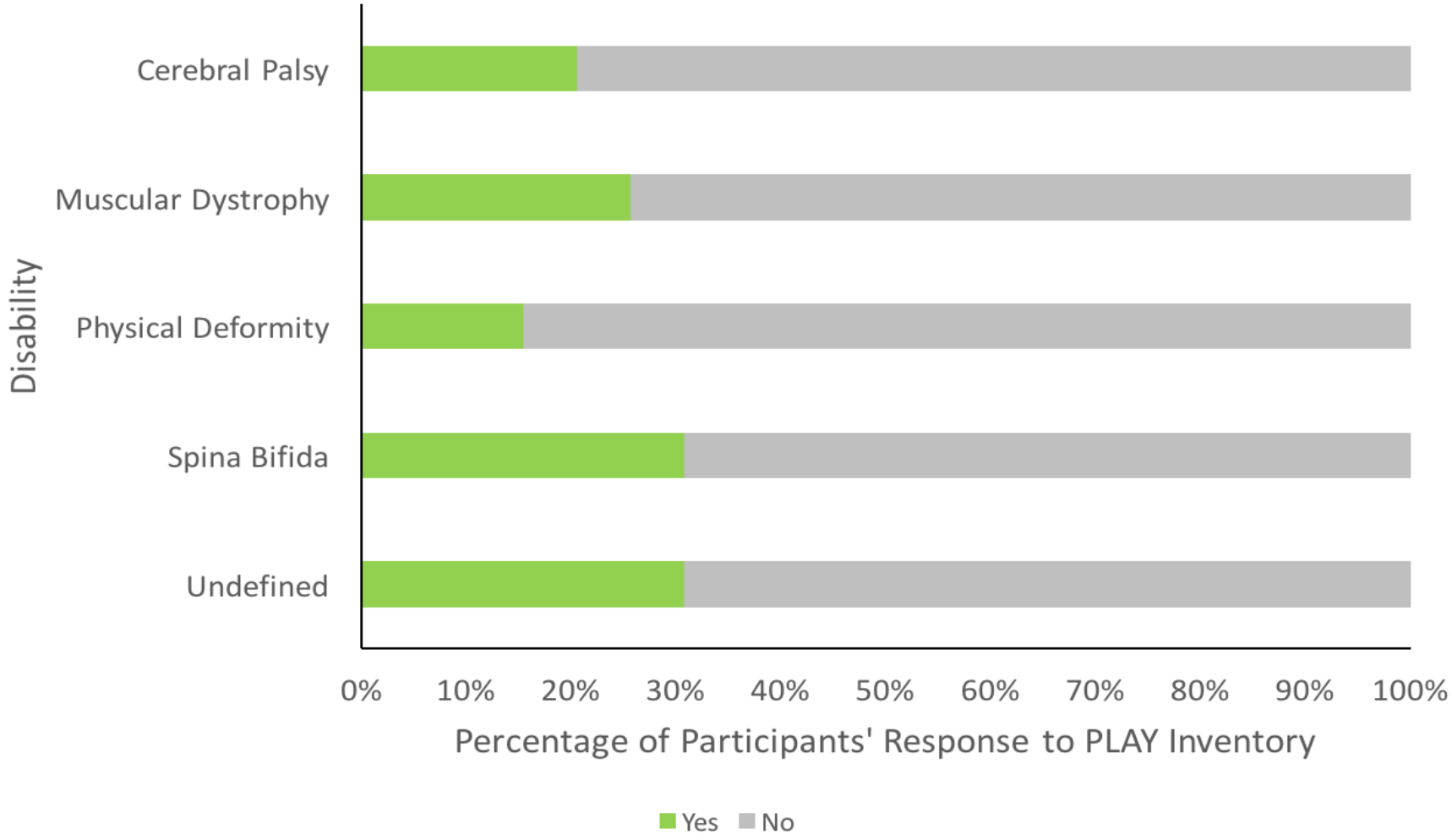


Figure 13: Percentage of Participants' Response to Regular Activity Participation On the Ice During Leisure Time Over the Past 12 Months According to Participants' Disability

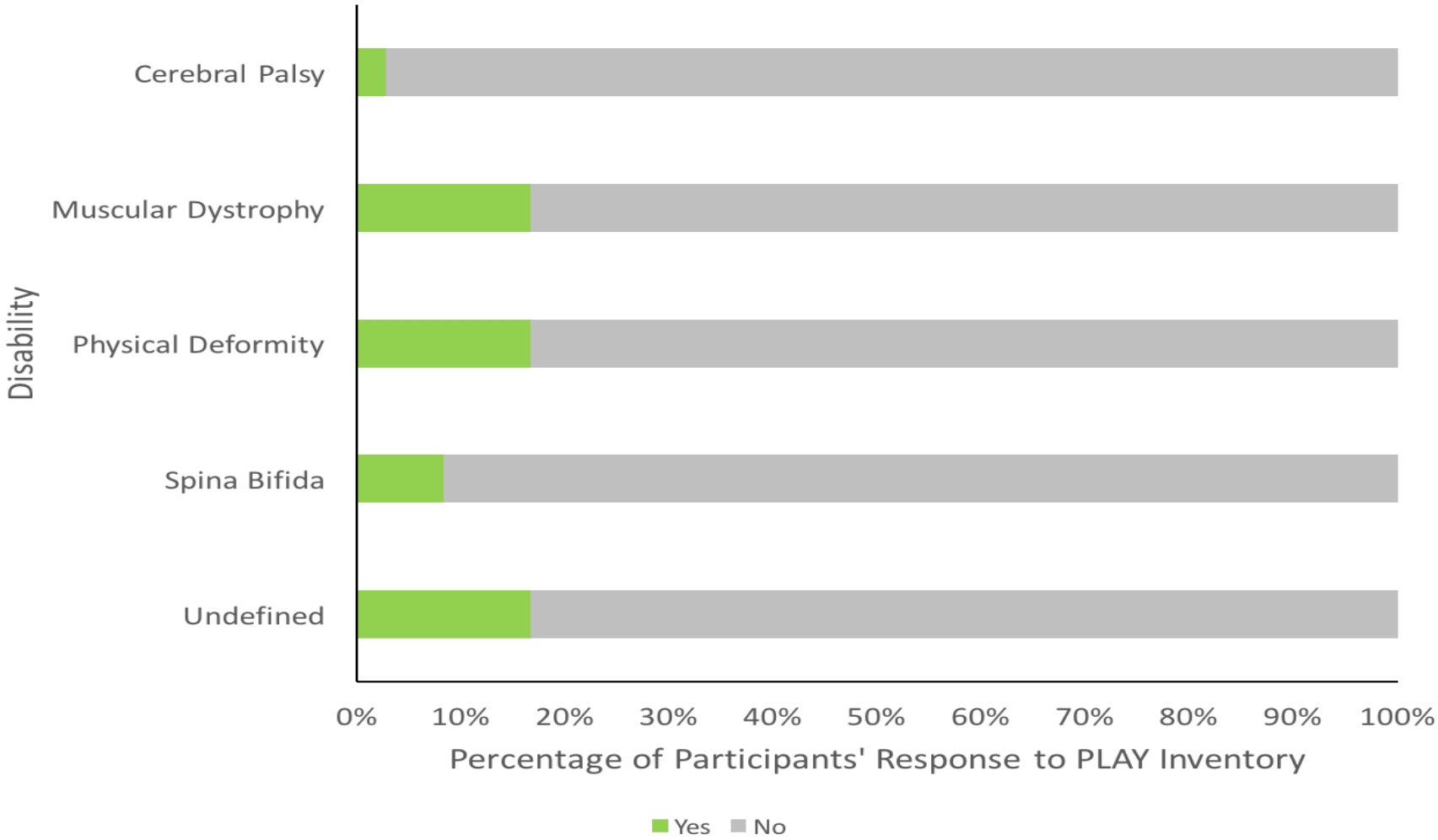


Figure 14: Percentage of Participants' Response to Regular Activity Participation On Snow During Leisure Time Over the Past 12 Months According to Participants' Disability

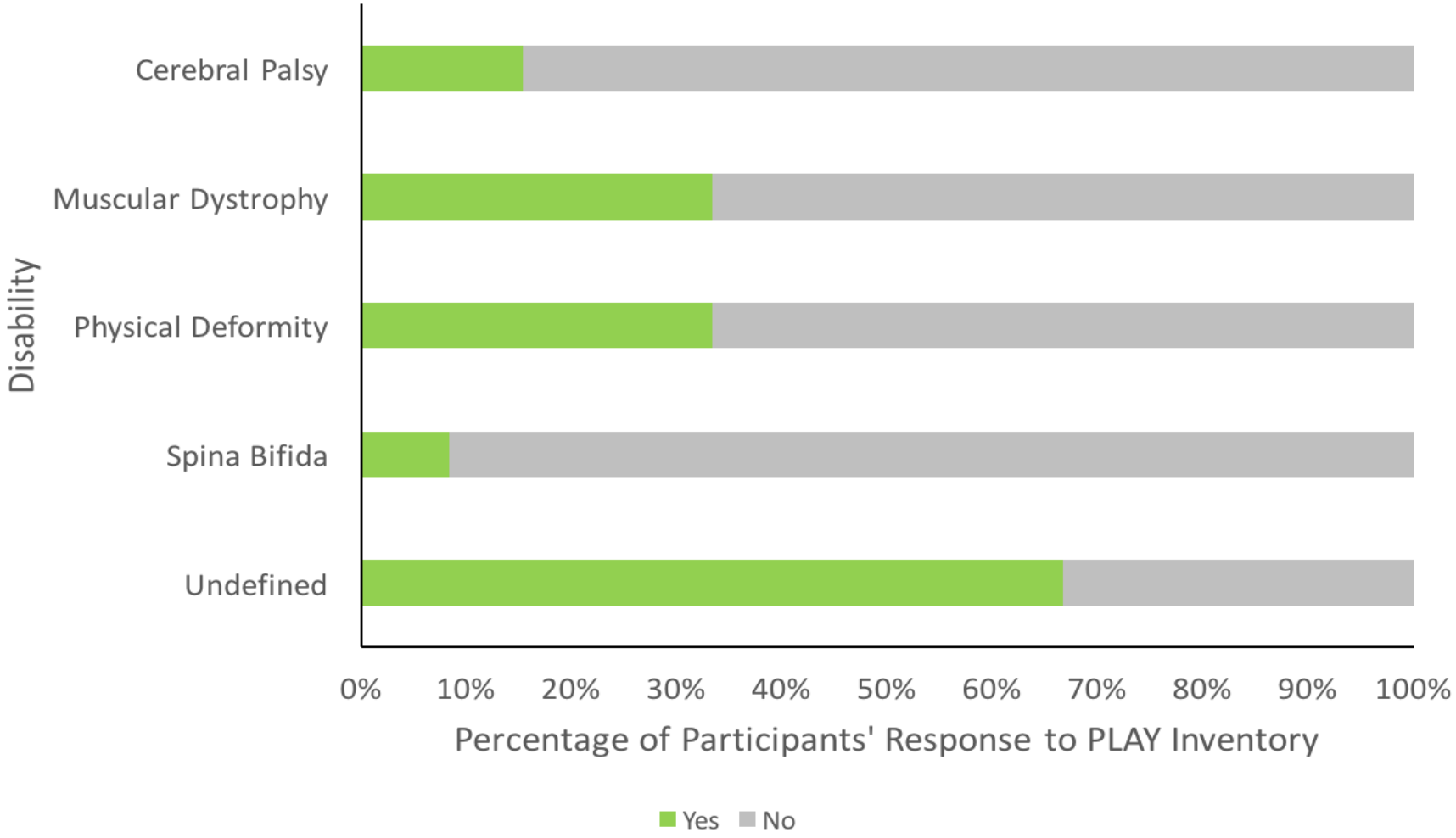


Figure 15: Percentage of Participants' Response to Regular Activity Participation In Sedentary Activities During Leisure Time Over the Past 12 Months According to Participants' Disability

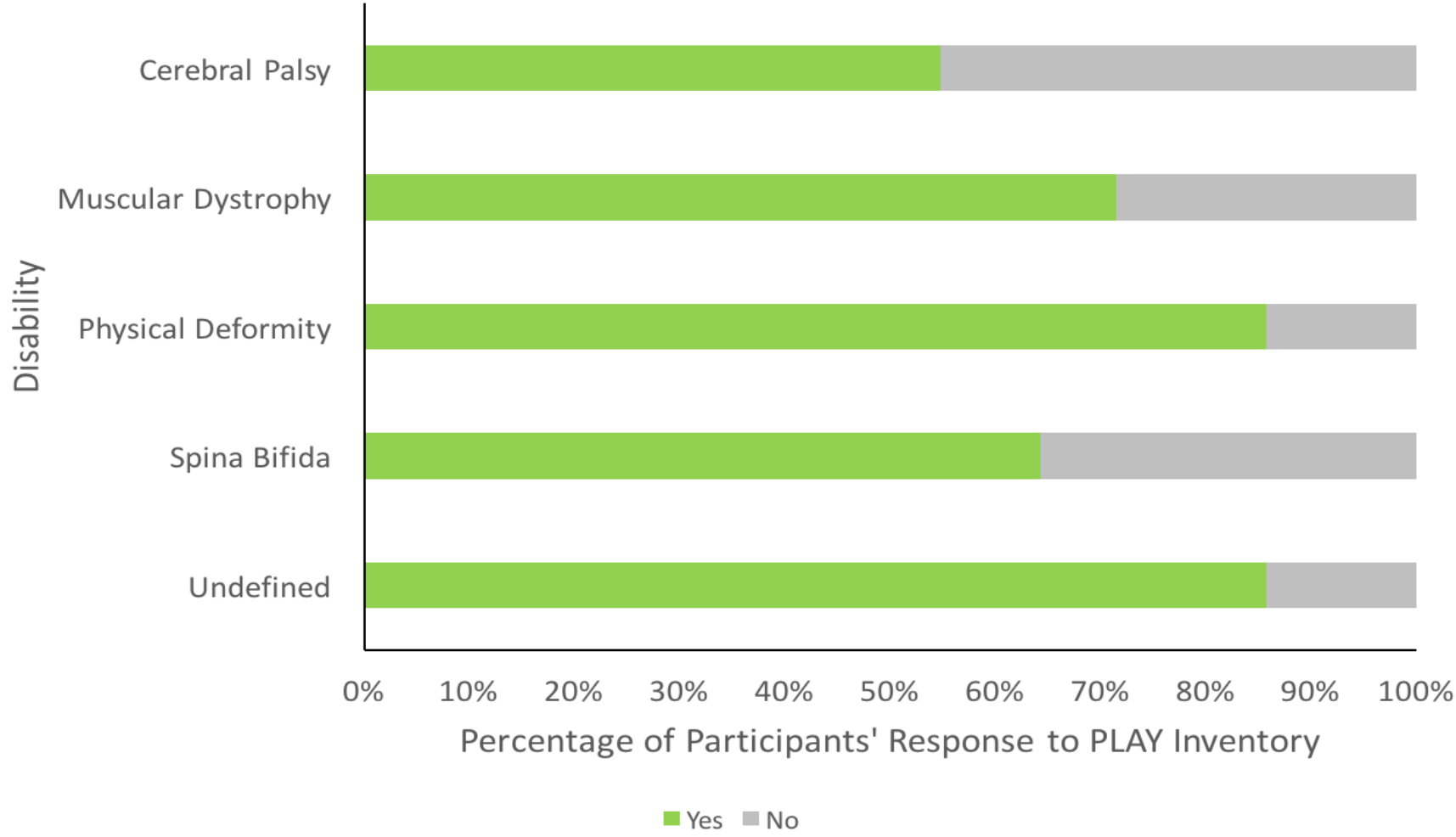


Figure 16: Percentage of Participants' Response to Regular Activity Participation Outdoors During Leisure Time Over the Past 12 Months According to Participants' Disability

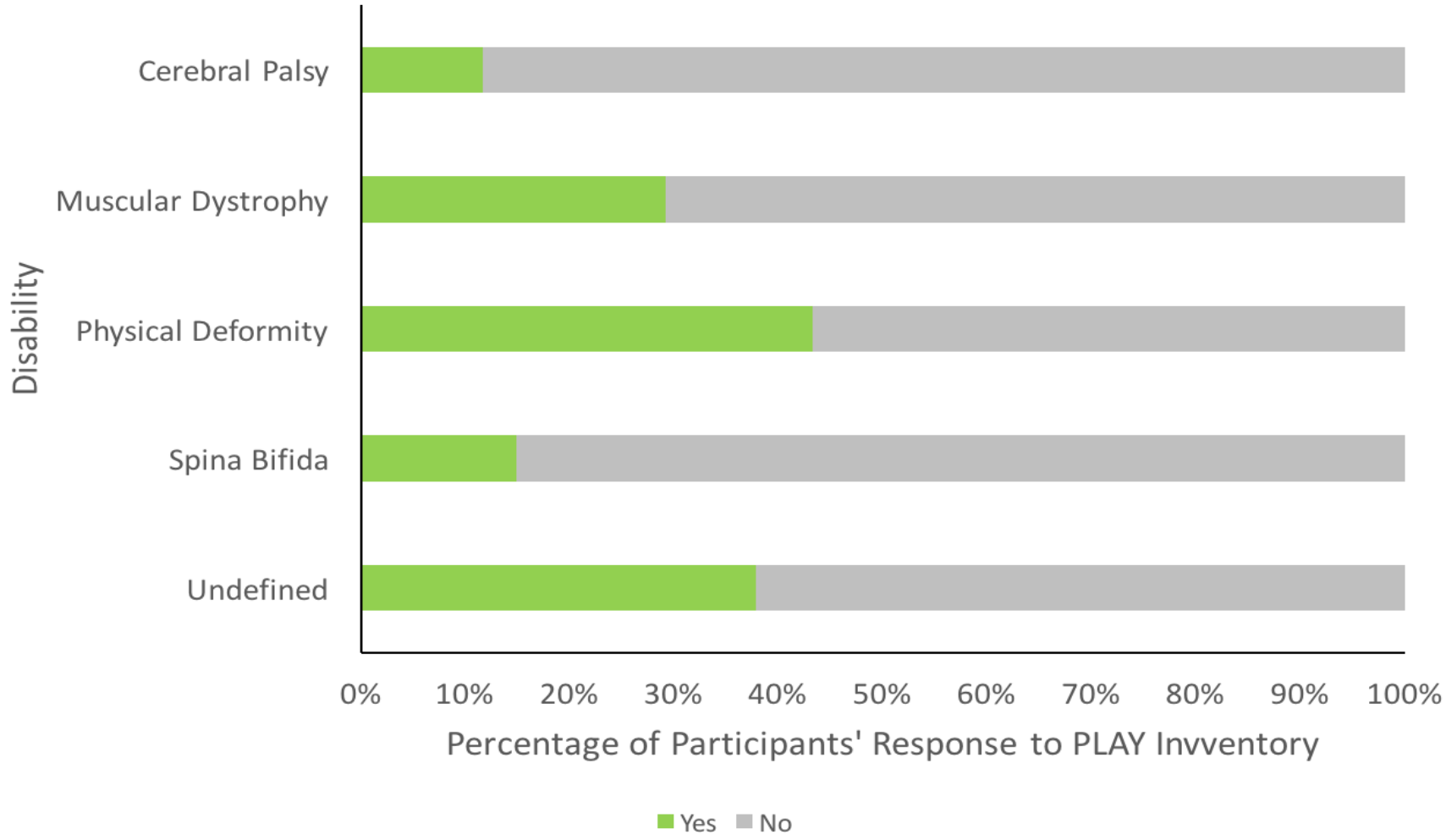
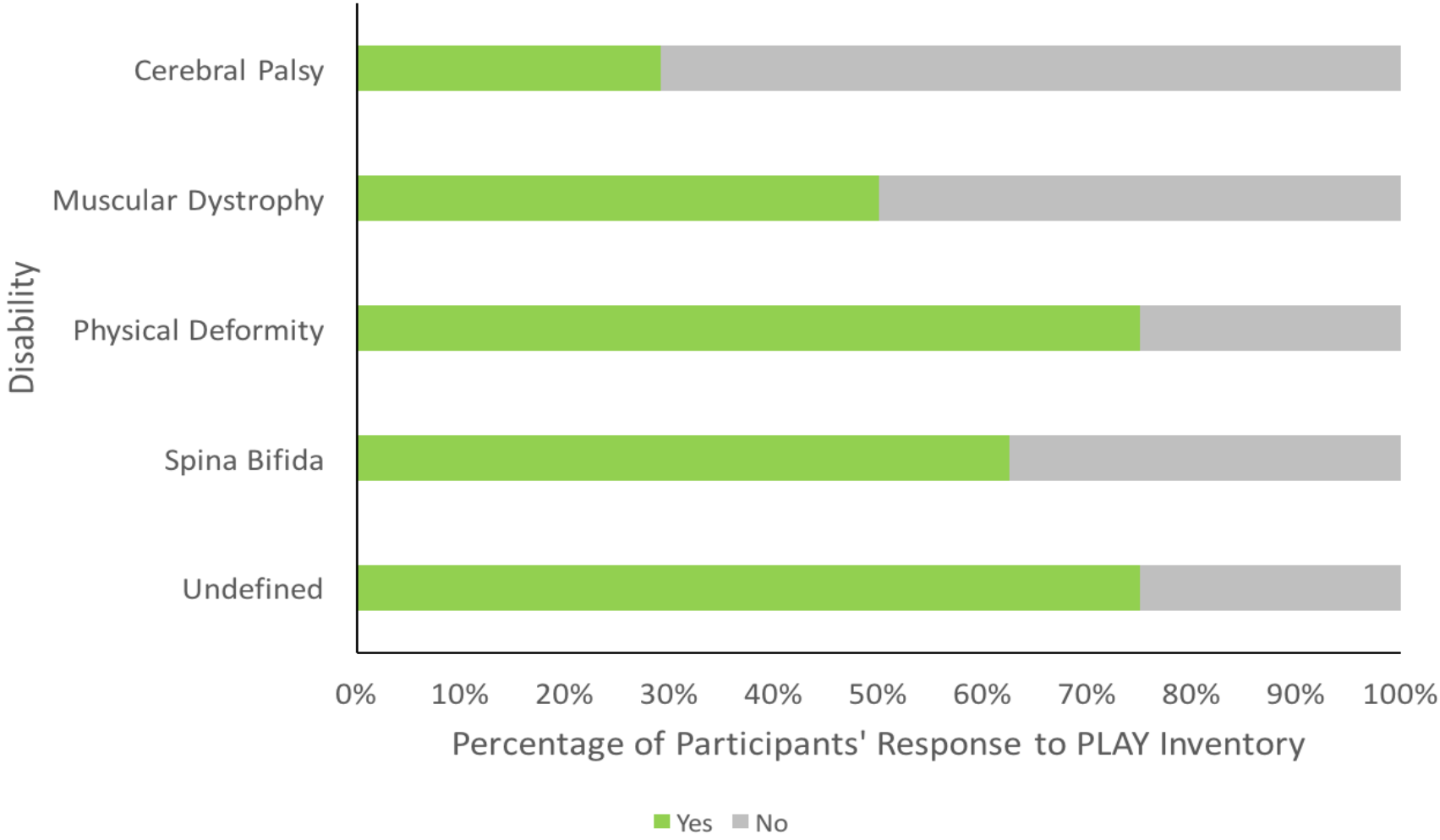


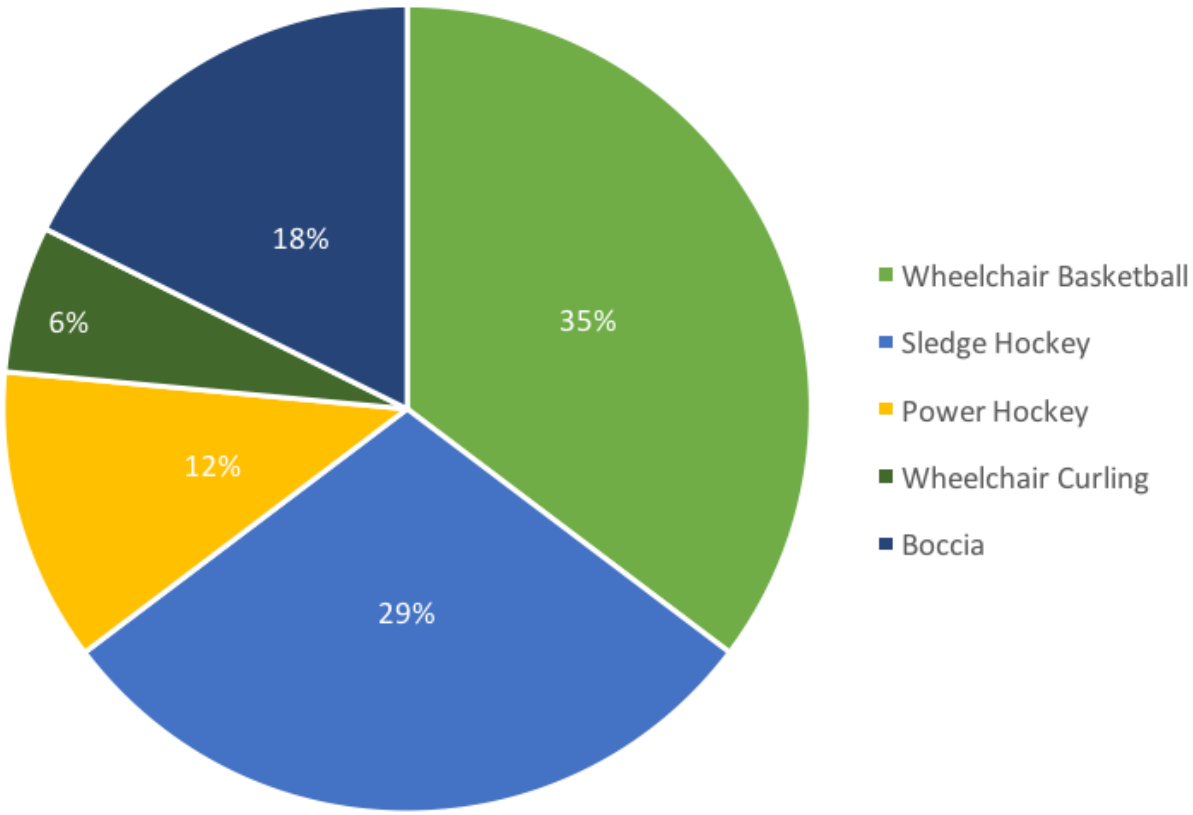
Figure 17: Percentage of Participants' Response to Regular Activity Participation Indoors (other than gym) During Leisure Time Over the Past 12 Months According to Participants' Disability



Participants' Participation in Activities Not Listed on PLAY*Inventory*

In the PLAY*Inventory* questionnaire, participants were given the opportunity to fill in an activity in which they regularly participate if the activity was not listed in the questionnaire. From the 13 participants surveyed, 7 participants (54%) reported participation in additional activities. These additional activities, designated under the term 'Other,' included wheelchair basketball (35%); sledge hockey (29%); power hockey (12%); wheelchair curling (6%); and boccia (18%). What is noteworthy about these activities is that they are Paralympic or adapted sports and activities, but do not appear on the PLAY*Inventory* questionnaire. This is because the original design of the PLAY*Inventory* questionnaire did not include any Paralympic or adapted sports and activities.

Figure 18*: Percentage of Participants Who Regularly Participate in Activities Not Listed on PLAYInventory During Leisure Their Time Over the Past 12 Months*



Two semi-structured interviews were conducted with the participants (n=13) following each physical literacy assessment. The first interview occurred after the initial assessment of the level of physical literacy in the participants: week 5 for the Brock Niagara Penguins, and Days 3-4 at Camp Merrywood. The second interview occurred in week 9 for the Brock Niagara Penguins and Days 5-6 at Camp Merrywood. The ages of the participants ranged from 7 to 23 years with an average age of 14 years. All interviews took place in a quiet location for one to one and a half hours, and were digitally recorded. Each interview was transcribed word for word and uploaded into the Dedoose web application which allows for analysis of mixed-methods data. Using a coding system, data was identified as coming from either Camp Merrywood or the Brock Niagara Penguins. Data was also coded as Pre or Post interview. An inductive approach was then used to explore common themes amongst the data. Relevant interview excerpts were marked for possible themes that began to emerge from the data.

What emerged were five central themes: i) participants' feelings about the physical literacy pathway tool; ii) previous experience in physical activity/physical education; iii) awareness and understanding of physical literacy; iv) perception of disability; and v) authenticity/feasibility of physical literacy pathway tool. A summary of the themes can be found in Figure 19. Table 3 also provides a breakdown of the occurrence of each sub-theme based upon time (Pre and Post) and participant group (Camp Merrywood, Brock Niagara Penguins).

Themes

I. Participants' Feelings about the Physical Literacy Pathway Tool.

Many of the participants spoke about the pleasure they experienced while using the Physical Literacy Pathway Tool.

> *"I liked… everything about the assessments. You know it's different, it doesn't happen every day… it was fun to do."*
>
> *"It makes me feel… more good. About myself? That means I can accomplish… Not everything but some of it?"*
>
> *"Like… I never… sometimes I never do that at my house. It was a cool experience."*

The participants also cited feelings of independence and autonomy when they were given the opportunity to select their own equipment and practice the movement tasks prior to being assessed.

> ***Investigator:*** *"Did you like being able to choose?"*
> ***Andy:*** *"Yeah."*
> ***Investigator:*** *"And what… kind of made you feel good about that?"*
> ***Andy:*** *"That it's my decision."*
>
> *"Uhh well it was just nice to try… I just picked the heaviest object to try and challenge myself."*
>
> ***Buzz Lightyear:*** *"I don't know I just felt like I wouldn't be able to throw the big ball, just the small ones."*
> ***Investigator:*** *"Did you like that you could practice beforehand? Why did you like that?"*
> ***Buzz Lightyear:*** *"'Cause you're ready to… like you have to prepare before you do it, right?"*

Others expressed their feelings about the language used in the Tool. Many considered the instructions to be clear and comprehensible and could attempt to execute the movement task.

> *"There was nothing that was unclear like uhhh… everything I could understand every like all the language like competent and stuff I kn… know what all that means…"*
>
> *"I feel like the language was pretty good… Just like… just 'cause like it's the way I always speak?"*

However, one participant alluded to the belief that the PLAY*Inventory* did not include any Paralympic or adapted sports. This was problematic because the participant was then required to write the sports she participated in under the "Other" column.

> *"I guess they're fine, but like… I don't know. I guess the whole point of it is to add in the… the adapted sports that you do, but like… it'd be nice if they were actually there."*

Conversely, another participant did not appear to find this troublesome.

> ***Investigator:*** *Did it bother you that you didn't see any adapted sports on there?*
> ***Mr. Potato Head:*** *No, 'cause it's always good to try new things you know like… just because you have a physical disability can't mean you can't do like a certain non-physical activity sport.*

II. Previous Experience in Physical Activity / Physical Education. Several of the participants described their involvement in physical activity and physical education, including competing in wheelchair curling, wheelchair basketball, boccia, power hockey, and sledge hockey.

> *"I play wheelchair hockey competitively."*
>
> *"I play soccer and a little bit of baseball."*
>
> *"I like to play a lot of sports… sledge hockey, wheelchair basketball, I'm competitive in boccia, we're working on curling, and I like to swim."*
>
> *"I go to certain programs for me to get fit."*

Others spoke of their commitment to their respective programs at Camp Merrywood and the Brock Niagara Penguins.

> *"Always taught not to let my disability get in the way… that's actually how I ended up at Merrywood."*
>
> ***Investigator:*** *"Can you tell me what you like about Merrywood?"*
> ***Sheriff Woody:*** *"I just like the fact that it finally has something to do with kids with disabilities… and they have a chance to do something? Instead of having to always adapt to something else?"*
>
> ***Investigator:*** *You might have been around that. So you've been involved with the Penguins for a long time!*
> ***Bullseye:*** *Like, 9 10 11 12… 5 years!*

Still, most participants conveyed that their participation in physical activity was limited to few sports. They suggested their exposure to a wide range of physical activities only took place at Camp Merrywood or the Brock Niagara Penguins.

> *"'Cause I don't have anything at home? Like I don't have any sports things to do at home…"*
>
> *"I think just trying as many different sports as possible because I've never been to sports camp so I don't know what kind of sports they do and but I tried handball for the first time yesterday and I really enjoyed it so…"*
>
> *"I feel like if… if I had the opportunity to do it here then I would be able to practice more… and get better at it…"*

Additionally, the participants identified substantial challenges to their participation in physical activity and physical education; specifically issues of accessibility and finances. These challenges often prevented the participants from maintaining sustained engagement in recreational or competitive physical activity.

> ***Sheriff Woody:*** *"Just get active get out there and… 'cause all of these sports I don't have in my area. I live in a small area in the middle of nowhere (laughs)…"*
> ***Investigator:*** *"Oh! (laughs) So a lot of these things you don't… you weren't able to try on a regular basis."*
> ***Sheriff Woody:*** *"Yeah if there's a league somewhere it's going to be an hour or two hours away."*

Jessie: *"… gym class I didn't always like as a child…"*
Investigator: *"Right…"*
Jessie: *"Because it was like ohhhh they're playing floor hockey… now I have to keep up…"*

"Well friends go skating on the weekends and stuff, or during the week… And I can't really go because I can't skate."

What is notable, though, is the participants' belief in equal opportunity for everyone.

"Cause in kids with disabilities should be able to play fun sports."

"I'm still the same person. In a wheelchair sometimes and stuff…"

"There's a walker, wheelchair class, and electric wheelchair class. So it's not uneven or unfair".

III. Awareness and Understanding of Physical Literacy. Predictably, nearly all the participants were unable to articulate the concept of physical literacy. They believed that physical literacy could be associated to an individual's health, level of fitness, or competency in fundamental movement skills.

"Umm… physical literacy is just… being as fit as you can."

"Uhh I think it's like knowing your fitness level and be able… being able to set goals for yourself? To like, succeed in different physical activities?"

"I would kind of just explain it to be like… being active and just… improving on certain skills that you have…"

"I'd say umm… I don't know the good things is being able to do simple things uhh… a bunch of things in life like umm… just the simple things like picking up things, and catching things and… Lifting up heavy things and everything… and balance."

"I don't know just the basic motor skills; I guess?"

Yet, one participant demonstrated a mature understanding of the concept of physical literacy. She articulated that physical literacy benefits the development of the whole

person, referencing the integration of the psychomotor, cognitive, and social and emotional domains of learning and development.

> *"It's knowing how to navigate the physical environment around you. 'Cause physical… physical literacy is not necessarily physical activity."*
>
> *"Although activity looks different for everybody, everybody has some form of physical literacy?"*
>
> *"Everybody should become as active as they can because it helps with the development of social and physical and emotional skills."*

IV. Perception of Disability. A prominent theme that emerged in the interviews were participants' unwavering confidence in their abilities, rather than their disabilities.

> ***Investigator**: "What do you like about sports or being active… what do you think is something important…"*
> ***Jessie:** "It clears my head. It makes me forget about being… disabled because I'm a… every time my mom watches me in a basketball game… WOW I wouldn't be able to do that… So you… you forget you're… you forget your limitations and focus on your… on your uhhh abilities and that's basically what I like about here too is just focusing on your abilities."*
>
> ***Investigator:** "Have you ever thought or ever felt that you were physically unable… to participate in an activity or a sport? So, for example, if you had hurt your arm really bad, maybe you couldn't go out and play football?"*
> ***Rex:** "Yeah! Yeah! I… I have done that but it didn't stop me from that much of like anything."*
>
> *"I'm still the same person. In a wheelchair sometimes and stuff…"*
>
> *"Usually the things I choose… are things that I know I can physically do?"*

Even so, some of the participants were not ignorant of the differences between themselves and their able-bodied peers.

> *"Well like, I can't do… I can't… I can't do the things that you can?"*

V. Authenticity / Feasibility of Physical Literacy Pathway Tool. Despite the participants' inability to fully grasp the meaning of physical literacy, they revealed a

strong inclination to use the Physical Literacy Pathway Tool in the future. Many of their sentiments spoke to the potential of the Tool to increase self-confidence and competency in fundamental movement skills, but especially enjoyment and to become more comfortable participating in physical activities.

> *"'Cause then they'll be able to build their confidence… and… Be able to fix mistakes."*
>
> *"It gets more people involved with and comfortable with certain things. Made me more comfortable for like doing sports…"*

More so, the participants discussed the capacity of the Physical Literacy Pathway Tool to be successful for a wide range of abilities.

> *"'Cause there's such a difference in people's abilities so this kind of works for everyone, not just one category of people?"*
>
> *"Because you… you did the traveling thing like our way of traveling. Didn't necessarily have to walk…"*
>
> ***Investigator:*** *"What were some of the things that you liked about these assessments?"*
> ***Jessie:*** *"That they weren't ag… age-geared? They were just… can you do it… That they could basically be adapted to anybody?"*

Figure 19: Qualitative Themes

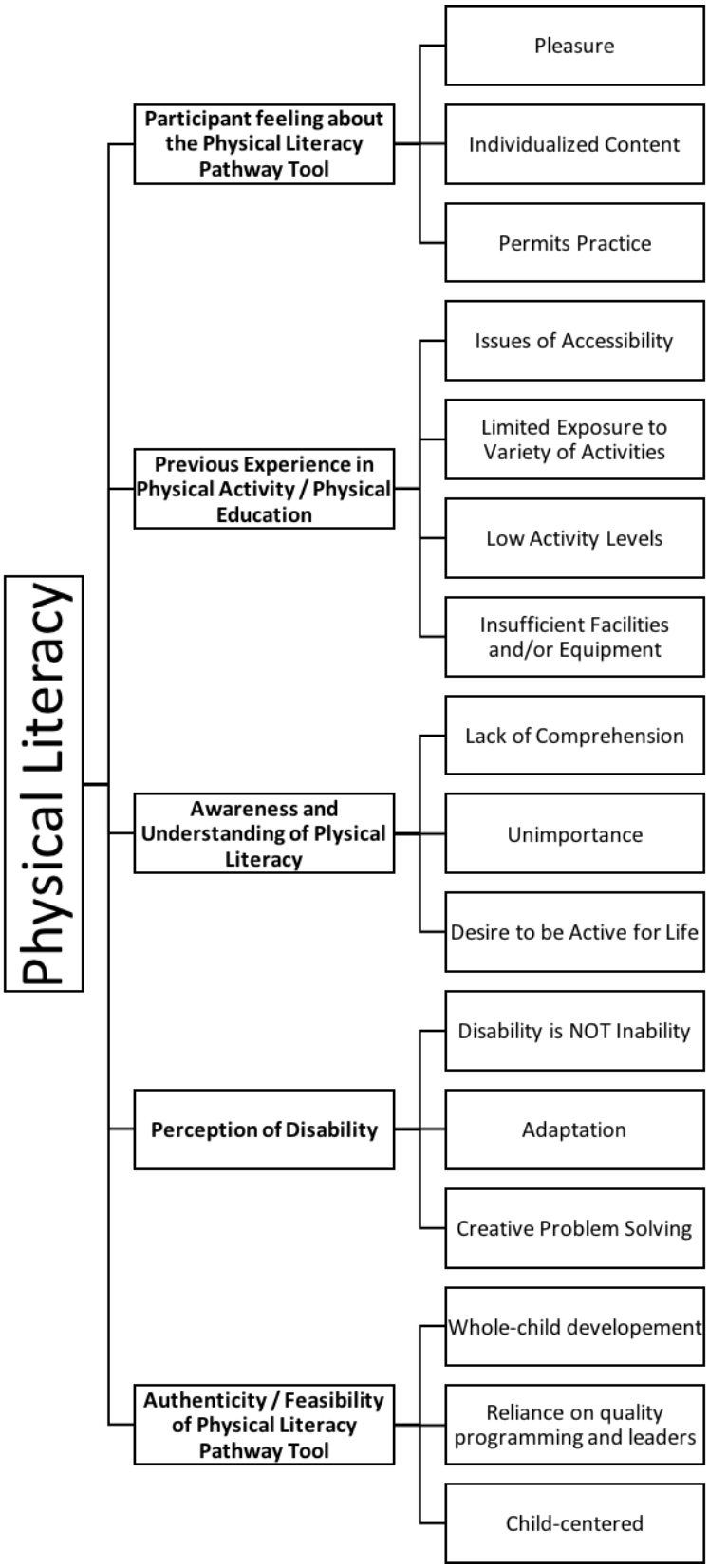


Table 3: Themes and Subthemes Identified by Group and Time

	Camp Merrywood Participants		Brock Niagara Penguins Participants	
	Pre	Post	Pre	Post
# Interviewed	9	9	4	4
# of Coded Excerpts	251	162	99	73
Participants' Feelings about the Physical Literacy Pathway Tool				
Pleasure	✓	✓	✓	✓
Personalized Content		✓		✓
Permits Practice		✓		✓
Previous Experience in Physical Activity / Physical Education				
Issues of Accessibility	✓	✓		
Limited Exposure to a Variety of Activities	✓		✓	
Low Activity Levels	✓	✓		
Insufficient Facilities and/or Equipment	✓	✓		
Awareness and Understanding of Physical Literacy				
Lack of Comprehension		✓		✓
Unimportance				✓
Desire to be Active for Life	✓	✓	✓	✓
Perception of Disability				
Disability is NOT Inability	✓	✓		✓
Adaptation	✓	✓	✓	✓
Creative Problem Solving	✓	✓	✓	✓
Authenticity / Feasibility of Physical Literacy Pathway Tool				
Whole-child Development		✓		✓
Reliance on Quality Programming and Leaders		✓		
Child-centered		✓		

Chapter V – Discussion

The findings that emerged because of the Physical Literacy Pathway Tool, PLAY*Self*, and PLAY*Inventory*, as well as the participant interviews revealed that everyone, regardless of ability, can be physically literate. In general, results obtained from the Physical Literacy Pathway Tool revealed that most participants achieved a competency level of 'competent' or 'proficient' in all six of the movement tasks. This paralleled the participants' scores in their individual PLAY*Self* categories, which indicated a high record of self-descriptions of physical literacy, as well as ranked physical literacy the most significant category when compared to literacy and numeracy. Interestingly, these results did not differ substantially when analyzed per participants' disability (Table 2).

Of relevance, there is a disassociation that occurred between participants' PLAY*Self* and PLAY*Inventory* results. In the last twelve months, approximately 70% of participants indicated they partake in sedentary activities during their leisure time, such as watching tv or movies, Facebook or browsing the Internet, or doing homework. This was followed by participants' regular involvement in indoor activity environments (e.g., bowling) and in or on water (e.g., swimming or canoeing). Participants spent the least amount of time in activities on the ice or in the gym, presumably, in part, due to less access to avenues for participation, lack of activity promotion and cost. Despite growing evidence to support the benefits of regular physical activity and exercise, current literature affirms that children with a disability "spend more time in sedentary activities and slower tempo skill-based activities and sports" (Shields & Synnot, 2014, p. 2080). In their paper, Shields and Synnot (2014) refer to a recent systematic review which reported

multiple interacting factors (e.g., personnel, social, environmental, policy and program-related) which influence the participation by children with a disability in physical activity or community sports. In this study, participants disclosed that there was a lack of appropriate and local opportunities for children and youth with disabilities. Oftentimes, they had to travel hours to attend an activity session or community sport practice.

Additionally, the results showed that the amended tool is inclusive. For example, participants connected inclusion with adaptable approaches, such as modification of activities, rules of sports or competition, and modified equipment. This was best reflected using generic language for the Physical Literacy Pathway Tool instructions, as well as the opportunity for participants to select a piece of equipment to use in the movement task. However, some of them expressed their frustration with the absence of Paralympic or adapted sports and activities in the PLAY*Inventory*, even though the able-bodied sport or activity was listed (i.e., basketball, curling). Participants did not select these able-bodied sports, and instead were required to write their Paralympic or adapted sports and activities in the space designated as 'Other' (e.g., wheelchair basketball, sledge hockey, boccia). Undoubtedly, this assessment inhibited the potential of participants with physical disabilities to accurately report their engagement in physical activity. This conclusion demonstrates the practical experience in changing attitudes and challenging people to confront and reconsider their ideas about disability (Sheilds & Synnot, 2014). "Incorporating practical and meaningful experience of disability into sport and recreational staff training, teacher training, and education might therefore be an effective way of increasing the participation of children with disability in physical activity and community sports" (Shields & Synnot, 2014, p. 2083).

Critique of Physical Literacy Pathway Tool, PLAY*Self* and PLAY*Inventory*

Corbin (2016) suggests that the use of the term physical literacy can provide a "blueprint" for program development and assessments (p. 17). Fittingly, Lundvall (2015) also supports assessment as one of the primary themes related to physical literacy in the published literature, and the authors encourage consideration of key issues when evaluating physical literacy. For instance, psychomotor characteristics are regarded as specific rather than general, so the concept of "general motor ability" and the tests designed to measure it are no longer favourable (Rosentsweig, 1980 in Corbin, 2016, p. 21). Corbin (2016) advocates for the identification of specific characteristics of physical literacy and to develop appropriate assessment procedures for each, as opposed to attempting to develop a general test. Correspondingly, the standards used to assess these characteristics are important, but are often criterion-referenced health standards. As iterated in my earlier argument, physical literacy is not synonymous with physical fitness; even though it is often mentioned as a characteristic of physical literacy.

The Physical Literacy Pathway Tool, PLAY*Self*, and PLAY*Inventory* attempt to represent the multidimensional facets of physical literacy. This is evidenced by the tool's potential to assess the four target areas of physical literacy: affective, behavioural, cognitive, and physical (Robinson & Randall, 2016). Regarding the affective domain, the PLAY*Self* assessment provides evidence that the individual wants to be physically active, which is an integral element of motivation and confidence. Specifically, the Physical Literacy Self-Description score focuses on a participant's belief in their ability to succeed in relation to their participation in physical activity (Canadian Sport for Life, 2013). Thus, an extensive movement vocabulary, sufficient motor skills, and a safe and

welcoming environment will help an individual sustain the motivation to participate in physical activity and consequently, become more confident (Canadian Sport for Life, 2013). However, Robinson and Randall (2016) claim that the PLAY*Self* assessment assumes that if the individual has competence and confidence in the skills assessed, they simply will be motivated to participate which, resultantly, does not efficiently address motivation.

In this study, a semi-structured interview was incorporated into the assessment. While it was not considered part of the assessment tool inventory, the interviews were used to interpret the participants' meanings of physical literacy and to deepen the interview relationship to achieve a wholesome understanding of participants' levels of physical literacy. It was also an opportunity for participants to describe their improvement in their level of physical literacy, as well as positive and negative impressions of the Physical Literacy Pathway Tool, PLAY*Self*, and PLAY*Inventory*. The results from this research indicate that the participants enjoyed the assessments and considered it to be different than their daily routine. The participants experienced pride in themselves, stating that it made them forget about their limitations and focused instead on their abilities. Resultantly, participants felt better about themselves knowing that they could accomplish the tasks. Simply put, one participant exclaimed, "[i]t was just fun!"

Notably, participants did not exhibit a broad movement vocabulary or attest to having exposure to a wide range of physical activities in different environments. Perhaps, in many cases, the participants' fun and enjoyment was prioritized over the learning of movement terminology. Or, as it has been discussed, issues of accessibility and finances

prevent participants from maintaining sustained engagement in recreational or competitive physical activity.

Additionally, Robinson and Randall (2016) advise that an assessment tool must reflect that physical literacy is a lifelong journey. Notably, "[t]here is no standardization or endpoint to being physically literate" (Robinson & Randall, 2016, p. 6). This behavioural element is addressed using the inventory sheet that includes a list of 95 possible activities, as well as the PLAY*Self* assessment used by participants to track their own physical literacy. On the same token, for an individual to be considered physically literate, "he or she must possess a sound sense of their own abilities and their understanding of their own current state of health and wellness" (Robinson & Randall, 2016, p. 6). The Physical Literacy Pathway Tool assesses this element of knowledge and understanding by providing participants with the opportunity to select their own equipment in the Sending, Receiving, and Lift and Lower tasks and to practice the movement task before being assessed. Participants expressed that it was gratifying to be able to challenge themselves with different pieces of equipment, but to also select the equipment with which they were confident they would be successful. This information was recorded in the assessment booklet; however, it was not factored into the computation of the competency result for the designated skill. Future studies should explore the potential of reporting the number of practice trials within the competency results for the three movement tasks herein.

The fourth target area of physical literacy, physical competence, was assessed using a combination of fundamental and vocational movement tasks reflective of physical literacy. These tasks were related to two categories of movement: locomotor transport

and object control. Participants were scored on the degree to which their performance matched pre-set success criteria using a four-point rubric. However, the tool implies that participants' levels of competency in the movement tasks is equivalent to achieving each criterion of success. Therefore, it is assumed that the success criteria are not connected to the four-point rubric because there are varying amounts of criteria for each movement task, and it is unclear how the criteria relate to the four-point rubric. Future research should develop more precise and consistent success criteria for the movement tasks that are attributed to each level of competency.

Assessment of fundamental movement skills, like those used in the Physical Literacy Pathway Tool, are important but not the primary focus of a physical literacy assessment (Whitehead, 2010). Still, participants believe that physical literacy is associated to an individual's health, level of fitness, or competency in fundamental movement skills. Jurbala (2015) and McCaffrey and Singleton (2013) agree that the interpretation of physical literacy is dependent on the objectives of a group; for example, participation in recreational activity. For this reason, Robinson and Randall (2016) concur with the amended tool's use of fundamental movement skills leading to more sport-specific skills. Furthermore, in line with CS4L's (2011) initial definition of physical literacy, "[p]hysical literacy incudes the ability to "read" what is going on around them in an activity setting and react appropriately to those events" (p. 5). This is especially relevant for individuals with a disability in various authentic, decision-making situations, such as coming to a stop before a crosswalk or lifting an object onto a shelf.

In this study, participants achieved consistent scores in the Traveling and Receiving tasks in each of the assessment phases, while Coming to a Stop, Sending, and

Lift & Lower showed minor fluctuations between the two assessment phases. Several of the participants attributed their competency to their previous, albeit limited, experience in physical activity and competitive sports. Others stated attending their respective programs at Camp Merrywood and the Brock Niagara Penguins were the only opportunities to interact within a range of environments (Robinson & Randall, 2016).

Despite being modified for a particular demographic (e.g., children and youth with physical disabilities), the intention is to employ the tool for individuals with mixed abilities. Participants discussed the capacity of the Physical Literacy Pathway Tool to be successfull for a wide range of abilities, suggesting that the adaptability of the amended tool makes is suitable for everyone. The literature substantiates the need for "standardization and clarification between measuring tools that report the same objective" (Giblin, Collins, & Button, 2014, p. 1180) and the revised tool maintains this by allowing myself and others to gather the same information from all the participants involved. The language used in the Physical Literacy Pathway Tool is nonspecific and calls upon the participant to employ a strategy that is characteristic of his or her best; for example, the instructions in the Traveling task are: "I want you to travel to the pylon, stop, turn around, and come back. I want you to choose the best way to move to the line, turn around and come back. Ready? Move now." On the same token, the criteria for the Receiving task are: tracking strategy is present; executes strategy to intercept object mid-flight; and object is received with control. Both the instructions and the criteria optimizes success for any participant because the movement is inherent to the individual. Therefore, physical literacy is intrinsically inclusive and represents a unique journey for each person (Canada's Physical Literacy Consensus Statement, 2015; Whitehead, 2010).

Strategies for Developing Physically Literate Individuals

Mandigo, Francis, Lodewyk, and Lopez (2009) discussed the potential of various sectors (e.g., sport, education, recreation, and health) in which a child interacts regularly to unite and share the goal of addressing the physical inactivity crisis. In support of this notion, Johnson, McKenna, and Lévesque (2016) allege that "physical literacy has emerged as a common ground upon which a unified, multi-sector approach can be built" (p. 5). However, past literature revealed a gap in the potential of physical literacy to reduce the sedentary lifestyles that are prevalent today, in part due to the "lack of a common definition of physical literacy across diverse sectors and a lack of instruments to assess physical literacy" (ParticipACTION, 2015 in Johnson, McKenna, & Lévesque, 2016, p. 4). Many different definitions of physical literacy were being used specific to the sector in which the physical literacy initiatives were being implemented, but in 2014, organizations collaborated with the International Physical Literacy Association to develop a definition of physical literacy to be used by all (Johnson, McKenna, & Lévesque, 2016, p. 4). They referred to physical literacy as "the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life" (Canada's Physical Literacy Consensus, 2015 in Johnson, McKenna, & Lévesque, 2016, p. 4). Underpinning this new definition is the need for all sectors (e.g., sport, education, recreation, and health) to provide children and youth with a wide range of meaningful movement opportunities and strengthen the relationship among the physical, cognitive, and affective domains of the individual developing physical literacy (Wall & Murray, 1994).

Limitations

Glesne (2006) claims that part of demonstrating the trustworthiness of a study is to acknowledge its limitations and provide the best results under these certain conditions. My ability to explain these circumstances will help the reader to appreciate the nature of the data and conclusions (Glesne, 2006).

One obvious limitation in this study was my dual role as researcher and coach with the Brock Niagara Penguins. I am aware that this may have altered the ways in which I 'saw' or 'heard' the data, and consequently report my findings. For instance, I may have more insight and a better comprehension of what is happening with the participants in this setting, but it could also have caused me to overlook significant details relevant to my research. I am also cognizant of the possibility that these participants may have felt coerced or obligated to participate because of my dual role. Even though numerous factors influence whether an individual participates in research, such as the perception that involvement in the study will provide benefit to future generations, it is plausible that the participants relied on the recommendations of their parents or guardians to take part in my research study than on the informed consent documents (Steinke, 2004). This means that they may have been less likely to carefully weigh the benefits or risks on their own (Steinke, 2004).

Another limitation was the research timeline, especially the duration of the observations and interviews. Since my data collection period was highly time-sensitive, there was very little opportunity for disorganization or mistakes. I also did not consider the possibility that some of the participants may be unable to participate for extenuating circumstances, or that they may withdraw since their participation is voluntary.

Furthermore, one-hour observations, once a week, may not have provided a comprehensive picture of the participants or an accurate representation of their levels of physical literacy. If I were to increase my observation time and conduct more than one interview with the participants, it is possible that the descriptions of the data would be thicker, and thus the conclusions more realistic.

Additionally, the Physical Literacy Pathway Tool did not effectively measure a participant's level of confidence during the movement tasks. Confidence is a construct that is extensively studied in sports and has traditionally focused on athletes who participate in competitive sport (Machida, Otten, Magyar, Vealy, & Ward, 2016). The sport-confidence model, however, can be applied to "understanding the learning process of sports skills in non-athlete sports participants" (Machida, Otten, Magyar, Vealy, & Ward, 2016, p. 1). Only a select few studies have used measures such as the Trait and State Sport-Confidence Inventory (TSCI; SSCI) on non-athlete sport performers, but as Bandura (1997) claims, "self-efficacy is a critical factor in maintaining adaptive cognitive functioning during a learning process and improving skills" (in Machida, Otten, Magyar, Vealy, & Ward, 2016, p. 4).

A final, but not conclusive, limitation was that the revised physical literacy assessment tool was not validated before it was utilized in this study. I had to rely on the recommendations from APA experts, my own knowledge and experiences, and strategies from published literature to ensure that the tool was purposeful and effective. Additionally, the revised tool was designed only for individuals with physical disabilities, and I did not go into detail on how this tool could be accessible for a more extensive list of disabilities, such as learning disabilities, cognitive or developmental delays, and

Autism Spectrum Disorder. I did not provide specific criteria for the different characteristics of each category of disability. Instead, I conducted the study through a specific lens (i.e., physical disabilities) and assumed, with evidence in the literature, that the concept of a physical literacy can benefit individuals of all abilities. Furthermore, published literature on the validity of the PLAY Tools for able-bodied persons is not yet available.

Future Directions

There are several future directions that should be explored to effectively describe levels of physical literacy in children and youth with physical disabilities. First, future research should investigate the reliability and validity of the amended Physical Literacy Pathway Tool, and should be conducted over an extended period (i.e., longitudinal study) to accumulate more accurate measures of participants' levels of physical literacy (Paffenbarger, 1988). On the same token, more attention should also be given to the development of the movement task criteria, considering the standards of development of (fundamental) motor skills for children and youth with different abilities.

Researchers should also consider incorporating more accessible means of data collection into the assessments to accommodate individuals who are unable to complete the PLAY*Self* and PLAY*Inventory* individually. For example, using a fillable, online form; speech-to-text software (i.e., Dragon). The present study excluded participants who were not able to express themselves verbally and in doing so, limited the participant pool. In 2012, one quarter (26%) of Canadians with disabilities were classified as very severe (Disability in Canada: Initial findings from the Canadian Survey on Disability, 2012). There is also a substantial gap in the current literature on this demographic, so more

research is necessary to collect essential information pertaining to physical literacy and resulting supports.

Furthermore, additional studies should implement these assessments in a variety of settings in multiple locations across the province of Ontario, such as physical education classes, Early Childhood Education centres, YMCAs, and competitive sports programs. If possible, these settings should be fully inclusive to uphold the perception that the Physical Literacy Pathway Tool is truly designed for mixed abilities.

Lastly, researchers should consider developing a training program through which to teach recreation providers how to perform the assessments. By doing so, they will become more proficient in their use of the Physical Literacy Pathway Tool and can use the data collected to evaluate and inform their respective programs.

Conclusion

Fostering literacy in all children and youth is considered a necessary and critical skill, but the idea of physical literacy is a more novel concept. Physical literacy is founded in the belief that the knowledge and skills acquired will benefit children and youth throughout their lives and help them to thrive in an ever-changing world (Building Health & Physical Literacy for Schools & Communities across Ontario, 2010). By helping them acquire physical literacy, children and youth can continue to "participate effectively in any sport or physical activity of their choosing, as well as to help them develop the comprehension, capacity, and commitment needed to lead healthy, active lives" (Building Health & Physical Literacy for Schools & Communities across Ontario, 2010, p. 28).

Whether physical literacy is described in academic terms or practical terms, it portrays an individual who is "sufficiently physically skilled to use their fully developed capacity for movement to achieve their personal goals in healthy physical activity or sporting excellence" (Higgs, 2010, p. 7). This study gives rise to the capacity of individuals with a physical disability to be physically literate, but more research is needed to comprehensively assess levels of physical literacy in individuals with any disability or exceptionality. Physical literacy is an ever-changing concept, but consistently "offers the opportunity… to make a strong case for every pupil to develop this capability" (Whitehead, 2010, p. 164).

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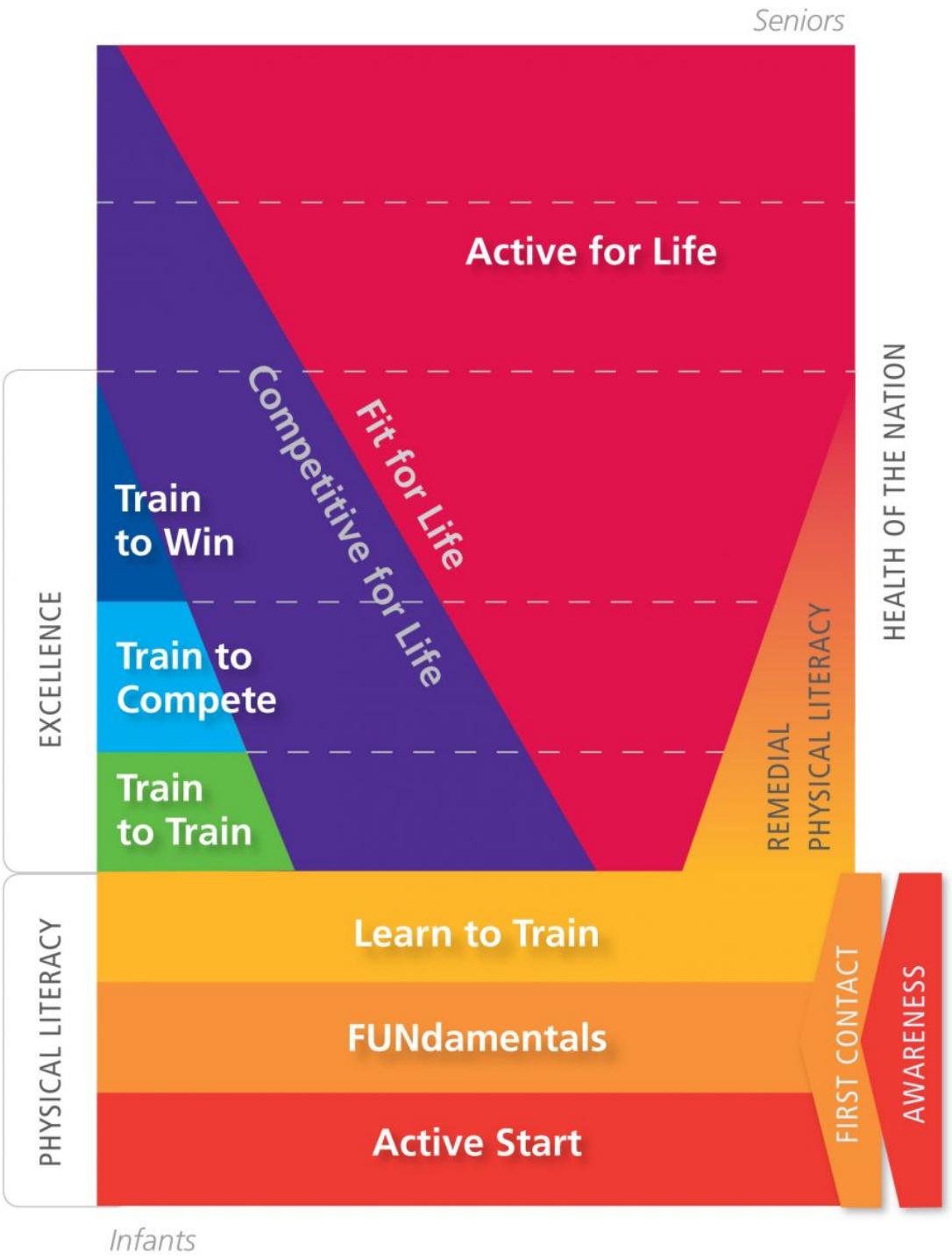
Appendix A

CS4L's Long Term Athlete Development (LTAD) Model



Appendix B

Margaret Whitehead's (2010) characteristics of physical literacy:

- Physical literacy can be described as the ability and motivation to capitalize on our movement potential to make a significant contribution to the quality of life.
- As humans we all exhibit this potential, however its specific expression will be particular to the culture in which we live and the movement capacities with which we are endowed.
- An individual who is physically literate moves with poise, economy and confidence in a wide variety of physically challenging situations.
- The individual is perceptive in "reading" all aspects of the physical environment, anticipating movement needs or possibilities and responding appropriately to these, with intelligence and imagination.
- A physically literate individual has a well-established sense of self as embodied in the world. This together with an articulate interaction with the environment engenders positive self-esteem and self-confidence.
- Sensitivity to and awareness of our embodied capacities leads to fluent self-expression through non-verbal communication and to perceptive and empathetic interaction with others.
- In addition, the individual has the ability to identify and articulate the essential qualities that influence the effectiveness of his/her own movement performance, and has an understanding of the principles of embodied health, with respect to basic aspects such as exercise, sleep, and nutrition.

Appendix C

The WHO (2001) provides criteria for classification, assessment, and intervention in health and disability. There are three major terms used to describe range of potential limitation to person-environment interactions:

a) Impairments of affected body structures and functions;

b) Limitations in activities required for daily living, vocational engagement, and leisure time; and

c) Restrictions of participation in socially appropriate activities.

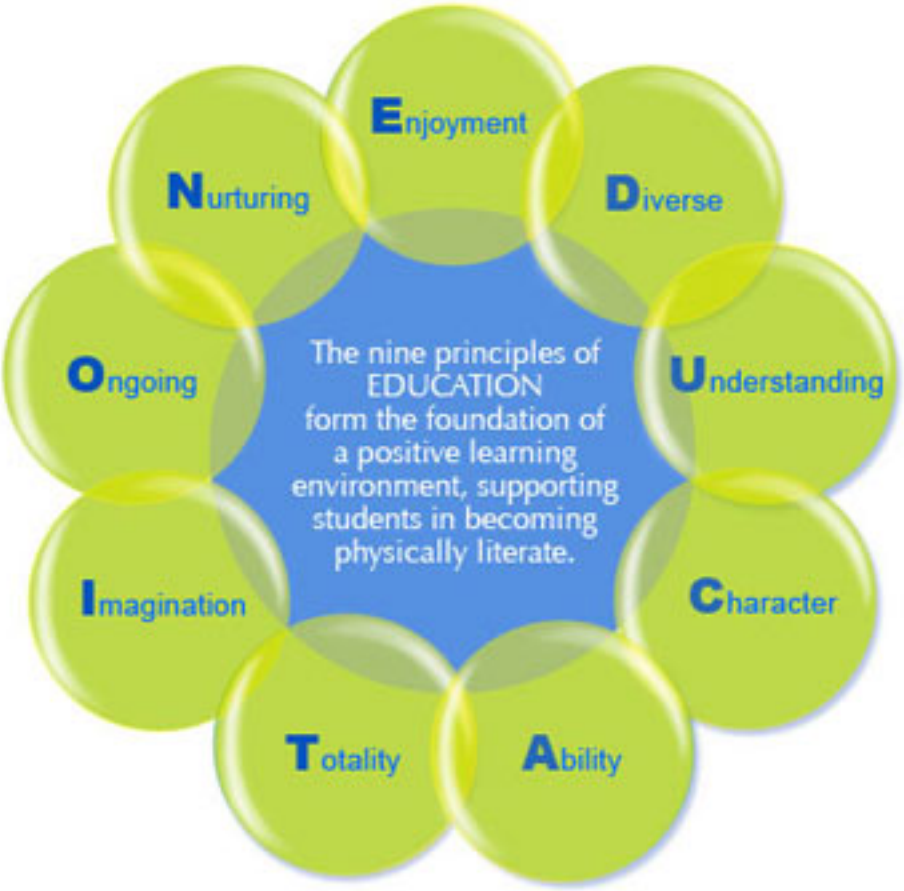
Appendix D

Standards of a quality physical education program (PHE Canada, 2010)

1. Daily curricular instruction for all students (K-12) for a minimum of 150 minutes/week.
2. Qualified, enthusiastic teachers.
3. Well-planned lessons incorporating a wide range of activities.
4. A high level of participation by all students in each class.
5. An emphasis on fun, enjoyment, success, fair play, self-fulfillment and personal health.
6. Appropriate activities for the age and stage of each student.
7. Activities that enhance cardiovascular systems, muscular strength, endurance, and flexibility.
8. A participation-based intramural program.
9. Creative and safe use of facilities and equipment.

Appendix E

Nine Physical Literacy Education Strategies (PHE Canada, 2010)



Appendix F

PLAY*fun*

Physical Literacy Assessment for Youth

PLAY*fun* is intended for children aged 7 and up.

canadiansportforlife.ca
play.physicalliteracy.ca

Participant's Name _____ Gender: M F Age: ____

Place a mark in the box that best represents the child's ability. Indicate if the child had low confidence, or needed a prompt, mimic, description, or demonstration for each task.

	Competence				Confidence	Comprehension			
	Developing		Acquired						
Task	Initial	Emerging	Competent	Proficient	Confidence	Prompt	Mimic	Describe	Demo
1. Run a square									
2. Run there and back									
3. Run, jump, then land on two feet									
4. Crossovers									
5. Skip									
6. Gallop									
7. Hop									
8. Jump									
9. Overhand throw									
10. Strike with stick									
11. One-handed catch									
12. Hand dribble stationary & moving forward									
13. Kick ball									
14. Foot dribble moving forward									
15. Balance walk (heel-to-toe) forward									
16. Balance walk (toe-to-heel) backward									
17. Drop to ground & back up									
18. Lift and lower									

Appendix G

PLAY*self*

Physical Literacy Assessment for Youth

Your Name _____ Gender: M F Age: ____

I am most active in (check all that apply): ○ summer ○ winter ○ active in both

How good are you at doing sports and activities?	Never tried	Not so good	OK	Very good	Excellent
1. In the gym?					
2. In and on the water?					
3. On the ice?					
4. On snow?					
5. Outdoors?					
6. On the playground?					

What do you think about doing sports and activities?	Not true at all	Not usually true	True	Very true
7. It doesn't take me long to learn new skills, sports or activities				
8. I think I have enough skills to participate in all the sports and activities I want				
9. I think being active is important for my health and well-being				
10. I think being active makes me happier				
11. I think I can take part in any sport/physical activity that I choose				
12. My body allows me to participate in any activity I choose				
13. I worry about trying a new sport or activity				
14. I understand the words that coaches and PE teachers use				
15. I'm confident when doing physical activities				
16. I can't wait to try new activities or sports				
17. I'm usually the best in my class at doing an activity				
18. I don't really need to practice my skills, I'm naturally good				

19. Reading and writing are very important	Do you agree or disagree with this statement?			
	Strongly disagree	Disagree	Agree	Strongly agree
In school				
At home with family				
With friends				

20. Math and numbers are very important	Do you agree or disagree with this statement?			
	Strongly disagree	Disagree	Agree	Strongly agree
In school				
At home with family				
With friends				

21. Movement, activities and sports are very important	Do you agree or disagree with this statement?			
	Strongly disagree	Disagree	Agree	Strongly agree
In school				
At home with family				
With friends				

22. My fitness is good enough to let me do all the activities I choose	Disagree	Agree

canadiansportforlife.ca
physicalliteracy.ca/PLAY

PLAY*self*

Physical Literacy Assessment for Youth

Physical Literacy Score Sheet

Environment

Use the following scale: Never tried = 0 Not so good = 25 OK = 50 Very good = 75 Excellent = 100

How good are you at doing sports and activities...	Never tried	Not so good	OK	Very good	Excellent	Score
1. In the gym?						
2. In and on the water?						
3. On ice?						
4. On snow?						
5. Outdoors?						
6. On the playground?						
					Total	

Physical Literacy Self-Description

For all questions *except question 13,* use the following scale:
Not true at all = 0 Not usually true = 33 True = 67 Very true = 100
For question 13, use the following scale: Not true at all = 100 Not usually true = 67 True = 33 Very true = 0

	Not true at all	Not usually true	True	Very true	Score
7. It doesn't take me long to learn new skills, sports or activities					
8. I think I have enough skills to participate in all the sports and activities I want					
9. I think that being active is important for my health and well-being					
10. I think that being active makes me happier					
11. I think I can take part in any sport/physical activity that I choose					
12. My body allows me to participate in any activity I choose					
14. I understand the words that coaches and PE teachers use					
15. I'm confident when doing physical activities					
16. I can't wait to try new activities or sports					
17. I'm usually the best in my class at doing an activity					
18. I don't really need to practice my skills – I'm naturally good					
				Subtotal	
13. I worry about trying a new sport or activity					
				Total	

Appendix H

PLAY*inventory*

Physical Literacy Assessment for Youth

Participant's Name _____ Gender: M F Age: _____

Place a check in the box if you have participated regularly in the activity during your leisure time (not in school or at work) in the past 12 months.

	House chores		Triathlon		Zumba
	Farm chores		Cycling		Spin classes
	Homework		BMX		Exercise classes
	Watching tv or movies		Mountain biking		Yoga
	Playing a musical instrument		Dirt biking or motocross		Crossfit
	Reading		Duathlon		Bowling
	Crafts		Inline skating		DVD/CD or home exercise
	Facebook or internet		Dog walking		Rock or wall climbing
	Playing "active" video games		Hiking		Fencing
	Playing video games		Skipping		Martial arts
	Swimming		Cross-country running		Boxing
	Swimming lessons		Trail running		Table tennis
	Waterskiing		Running		Track and field
	Wakeboarding		Jogging		Dance
	Surfing		Walking		Gymnastics
	Kiteboarding		Geocaching or orienteering		Weight training
	Synchronized swimming		Playing tag		Body building
	Canoeing		Cheerleading		Baton twirling
	Rowing		Scooter		Badminton
	Curling		Playground		Tennis
	Diving		Equestrian		Hunting
	Skating		Mountain climbing		Racquetball
	Snowshoeing		Jumping rope		Squash
	Snowboarding		Golf		Target shooting
	Tobogganing		Fishing		Archery
	Downhill skiing		Gardening		Playing catch
	Cross-country skiing		Skateboarding		Sailing
	Kayaking		Soccer		Football
	Basketball		Volleyball		Trampoline
	Shoveling snow		Hockey		Ringette
	Figure skating		Speed skating		Ultimate
	Baseball		Softball		Other:
	Other:		Other:		Other:
	Other:		Other:		Other:

For more information go to: physicalliteracy.ca
or Canadian Sport for Life: canadiansportforlife.ca

physicalliteracy.ca

CS4L PHYSICAL LITERACY

Appendix I

Erica Dugas | Brock University | 2015

PHYSICAL LITERACY PATHWAY TOOL

Participant Name:

Program:

Grade:

LOCOMOTOR
Traveling

Equipment
For this task, you'll need:

2 pylons (5m metres apart)

Mobility Aid

- ☐ None
- ☐ Walker / Cane
- ☐ Manual Wheelchair
- ☐ Electric Wheelchair

Instructions
"I want you to travel to the pylon, stop, turn around, and come back. I want you to choose the best way to move to the line, turn around and come back. Ready? Move now."

Number of practice trials: _____

Success Criteria:

- ☐ Moves at his/her own pace;
- ☐ Movement is as smooth or balanced as possible; and
- ☐ Movement is controlled in a single direction and during a change of direction.

Developing	Acquired
☐ **INITIAL:** Becomes acquainted with the movement task	☐ **PROFICIENT:** Overall proficiency is depicted by the quality of the movement
☐ **EMERGING:** Able to execute basic sequencing of the task	☐ **COMPETENT:** Able to problem solve with present conditions

Body Management

Coming to a Stop

Equipment

For this task, you'll need:

- A large wall (assessor at this end)
- 1 pylon (5m away from wall)

Mobility Aid

- ☐ None
- ☐ Walker / Cane
- ☐ Manual Wheelchair
- ☐ Electric Wheelchair

Instructions

"I want you to travel to the wall and stop. I want you to choose the best way to move so that you can stop at the wall. Ready? Move now."

Number of practice trials: _____

Success Criteria:

- ☐ Can stop at the pylon;
- ☐ Can stop at the pylon with control; and
- ☐ Able to move with visual cues during task.

Developing	Acquired
☐ **INITIAL:** Becomes acquainted with the movement task	☐ **PROFICIENT:** Overall proficiency is depicted by the quality of the movement
☐ **EMERGING:** Able to execute basic sequencing of the task	☐ **COMPETENT:** Able to problem solve with present conditions

Object Control

Sending

Equipment

For this task, you'll need:

- A large wall (target area)
- 1 pylon (2m away from the wall)
- 3 different sized balls or objects
- Various implements or a ramp

Mobility Aid

- ☐ None
- ☐ Walker / Cane
- ☐ Manual Wheelchair
- ☐ Electric Wheelchair

Instructions

"I want you to send the ball towards the wall so that it hits the wall. I want you to choose the equipment that you think will help you be successful. Ready? Send now."

Number of practice trials: _____

Equipment Preference: _____

Success Criteria:

- ☐ Establishes relationship with target;
- ☐ Beginning sending strategy is present;
- ☐ Trajectory of the ball is controlled;
- ☐ Accuracy is achieved;
- ☐ Force production strategy is present; and
- ☐ Follow-through is present.

If using an implement:

- ☐ Effective swinging action; and
- ☐ Beginning sending strategy and follow -through are present.

Developing	Acquired
☐ **INITIAL:** Becomes acquainted with the movement task	☐ **PROFICIENT:** Overall proficiency is depicted by the quality of the movement
☐ **EMERGING:** Able to execute basic sequencing of the task	☐ **COMPETENT:** Able to problem solve with present conditions

Object Control

Receiving

Equipment

For this task, you'll need:

- 2 pylons (3m apart - participant at one end, assessor at the other)
- 3 different sized balls or objects
- Velcro glove

Mobility Aid

- ☐ None
- ☐ Walker / Cane
- ☐ Manual Wheelchair
- ☐ Electric Wheelchair

Instructions

"I want you to catch the ball that I throw to you. You can use whichever hand you like, or both hands. I want you to catch the ball as best you can. Ready? Catch now."

Number of practice trials: _____

Equipment Preference: _____

Success Criteria:

- ☐ Tracking strategy is present;
- ☐ Executes strategy to intercept object mid-flight; and
- ☐ Object is received with control.

Developing	Acquired
☐ **INITIAL:** Becomes acquainted with the movement task	☐ **PROFICIENT:** Overall proficiency is depicted by the quality of the movement
☐ **EMERGING:** Able to execute basic sequencing of the task	☐ **COMPETENT:** Able to problem solve with present conditions

Balance & Body Control

Lift & Lower

Equipment

For this task, you'll need:

- Wall area
- 3 pieces of tape
- 3 different sized balls or objects

Mobility Aid

- ☐ None
- ☐ Walker / Cane
- ☐ Manual Wheelchair
- ☐ Electric Wheelchair

Instructions

"I want you to lift the object as high as you can and bring it back down. I want you to lift the object to the highest possible marking on the wall and lower it back down to where it started. Ready? Go now."

Number of practice trials: _____

Equipment Preference: _____

Success Criteria:

- ☐ Participant performs a controlled lift or reach with a momentary stop;
- ☐ Participant uses his/her full range of movement;
- ☐ Secure grasp of the ball/object; and
- ☐ Well-controlled descent of ball/object.

Developing	Acquired
☐ **INITIAL:** Becomes acquainted with the movement task	☐ **PROFICIENT:** Overall proficiency is depicted by the quality of the movement
☐ **EMERGING:** Able to execute basic sequencing of the task	☐ **COMPETENT:** Able to problem solve with present conditions

Balance & Body Control

Dynamic Balance

Equipment

For this task, you'll need:

- Floor space
- Skipping rope(s) taped to floor
- 3 agility dots

Mobility Aid

- ☐ None
- ☐ Walker / Cane
- ☐ Manual Wheelchair
- ☐ Electric Wheelchair

Instructions

"I want you to travel along the markings on the ground so that you are walking on the path, or that your mobility device is on either side of the path. I want you to stay on the path as best as you can. When you come across an obstacle, I want you to move around the obstacle, and continue along the path. Ready? Move now."

Number of practice trials: _____

Success Criteria:

- ☐ Able to follow a consistent pathway;
- ☐ Adapts weight-bearing surfaces appropriately; and
- ☐ Negotiates obstacles with control.

Developing	Acquired
☐ **INITIAL:** Becomes acquainted with the movement task	☐ **PROFICIENT:** Overall proficiency is depicted by the quality of the movement
☐ **EMERGING:** Able to execute basic sequencing of the task	☐ **COMPETENT:** Able to problem solve with present conditions

Adapted from CS4L PLAY Tools

Canadian Sport for Life. (2013). *Physical Literacy Assessment for Youth.* Victoria, B.C.: Kriellaars, Dean.

Appendix J

Organizational Consent Form: Brock Niagara Penguins

Title of Study: Assessing Physical Literacy: Leveling the Playing Field for Children and Youth with Disabilities

Principal Student Investigator: Erica Dugas, MA Candidate
Faculty of Applied Health Sciences, Brock University

INVITATION

The following consent form is to inform you of a study we wish to conduct with the Brock Niagara Penguins and to seek your permission to participate in the study. The purpose of this research project is to better understand the level of physical literacy in children and youth with physical disabilities using revised assessment tools from Canadian Sport for Life's Physical Literacy Assessment for Youth (PLAY). The concept of being literate involves being educated or cultured and having knowledge and competence. The concept of physical literacy is similar, but applied to movement, that is, one's level of competency and motivation for physical movement. Participating in this research project will also help to enhance these levels of physical literacy through quality assessment, training, and programming.

WHAT'S INVOLVED

Your organization will be asked to assist with recruitment of both Program Managers (i.e., coaches, instructors, or leaders) and child/youth participant candidates for this study with the Brock Niagara Penguins. A consent form will be distributed to Program Managers, and a list of potential child/youth participants will be generated for the Principal Student Investigator.

With permission, the Principal Student Investigator will arrange to meet with potential participants and their parents/guardians during one of the organized wheelchair basketball, swimming, or boccia practices to discuss the particulars of involvement in the study and address any questions or concerns. Then, consent forms and minor assent forms will be distributed to the potential participants and completed as they see fit.

Program Managers are the gatekeepers to the child/youth participants required for this study, and it is intended that they help maintain an open line of communication between the researchers and the participants. This entails communicating with the Principal Student Investigator biweekly via email and coordinating times and locations for the participants' assessments and interviews. This will take between 5 and 10 minutes of Program Managers' time every other week.

Subsequently, the study contains several parts for the child/youth participants in two phases:

PHASE ONE

1. Physical Literacy Assessment (Pre-Test)

The Principal Student Investigator will administer an initial assessment of each consenting participant's level of physical literacy using revised assessment tools from Canadian Sport for Life's PLAY (PLAYBasic, PLAYSelf, and PLAYInventory) Tools. Only these tools will be used to assess participants' levels of physical literacy. The results of the assessment will be recorded electronically and secured on a password protected portable USB device and locked in an office at Brock University.

The total time to administer the various revised assessment tools is approximately 1-2 hours.

2. Participant Interview #1

Semi-structured interviews with participants will take place following the initial physical literacy assessment. The interviews will last between 30 and 45 minutes, and will gather insight into:

a) Participants' experience in sport and/or recreation
b) Participants' perceptions of the impact that the Brock Niagara Penguins has had upon acquiring physical literacy
c) Participants' perception of the relevance of physical literacy in their own lives

PHASE TWO

3. Physical Literacy Assessment (Post-Test)

The Principal Student Investigator will administer a follow-up assessment of each participant's level of physical literacy using the same assessment tools (PLAYBasic, PLAYSelf, and PLAYInventory). The primary purpose of this assessment is to determine whether the participants improved in their levels of physical literacy. The results of the assessment will be recorded electronically and secured on a password protected portable USB device and locked in an office at Brock University.

The total time to administer the various revised assessment tools is approximately 1-2 hours.

4. Participant Interview #2

Semi-structured interviews with participants will once again take place following the secondary physical literacy assessment. The interviews will last between 30 and 45 minutes, and will gather insight into:

a) Participants' perceptions of their levels of physical literacy and whether they improved or not from the initial assessment
b) Participants' experience with and impressions of the revised assessment tools

POTENTIAL BENEFITS AND RISKS

It is anticipated that this type of research will help provide a better understanding of the levels of physical literacy in children and youth with physical disabilities in sport and recreational settings. Beyond this, it will help to understand how to improve or enhance physical literacy initiatives through quality assessment and programming.

Also, this study will serve as a pilot through which to validate the use of a physical literacy assessment tool for children and youth with physical disabilities, and ultimately, for mixed abilities as a whole.

The movement activities used in this study pose no greater risk of physical injury than what would have already been present in existing activities and uses of the PLAY Tools by the Brock Niagara Penguins. In case of injury, the protocols and policies established by the Brock Niagara Penguins will be followed. This includes referral to appropriate medical care if necessary.

There is also the risk that participants will feel obliged to take part in this study because they may know the researchers. The Principal Student Investigator will reassure participants that their participation is voluntary, and that their assessments of physical literacy will in no way affect their involvement with the Brock Niagara Penguins. Participants will also be reminded that they can choose to withdraw from the study at any time.

CONFIDENTIALITY

- All personal information will be kept strictly confidential and names will be replaced with a pseudonym. Only the Principal Student Investigator and Faculty Supervisor will have access to the pseudonyms and corresponding names. This is required to match pre- and post-data. After all the data has been collected, the list of pseudonyms and corresponding names will be destroyed.
- All data will be stored on a password protected portable USB device and secured in a locked cabinet within a locked office located at Brock University. Only the Principal Student Investigator and the Faculty Supervisor will know the lock combination.
- Once the data has been analyzed for the purposes of the research study, physical literacy assessments and interview transcripts will be destroyed. As well, electronic data and audio recordings will be deleted from their respective devices and disposed of appropriately.
- Access to this data for the research purposes identified will be restricted to Principal Student Investigator and Faculty Supervisor involved with the study.
- If your organization chooses to withdraw from the study, all data collected from Program Managers and child/youth participants will be destroyed.

VOLUNTARY PARTICIPATION

- Participation in this study is voluntary and your organization may withdraw from the study at any time and for any reason without penalty. You can simply inform the Principal Student Investigator regarding your intention to withdraw.
- Should you choose to withdraw from the research study, all data collected from Program Managers and child/youth participants will be destroyed.
- You may ask questions of the Principal Student Investigator at any point during the research process.

PUBLICATION OF RESULTS

A summary of the results will be made available to the organization, participants, and their parents in the study in the Fall of 2016. The results may also be presented at research conferences. It is important to note that the Brock Niagara Penguins will be named as a participating organization in the publication of results, but the confidentiality of each participant will be maintained in each publication and presentation. In the event that names are used in any publication or presentation, pseudonyms will be used to replace actual names and to ensure individual data cannot be identified.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or would like more information, please contact the Principal Student Investigator using the contact information written below. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (14-239). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at Brock University at (905) 688-5550 Ext. 3035, or by email at reb@brocku.ca.

Thank you for your assistance in this project. Please keep a copy of this form.

Erica Dugas
Principal Student Investigator
MA Candidate, Faculty of Applied Health Sciences
Email: erica.dugas2@brocku.ca
Phone: 905-688-5550 x4481

Dr. James Mandigo
Faculty Supervisor
Faculty of Applied Health Sciences
Email: jmandigo@brocku.ca
Phone: 905-688-5550 x4789

✂✂✂

CONSENT FOR PARTICIPATION

I agree to allow the Brock Niagara Penguins to participate in the study described above. I have made this decision based on the information I have read in this letter. I have had the opportunity to ask questions and I know that I can ask more questions in the future. I know that I may change my mind and withdraw consent at any time.

Name of Official Responsible for Research: _____

Position Held: _____

Program Name: _____

Signature of Official: _____ Date: _____

Appendix K

Participant Consent Form: Brock Niagara Penguins

Title of Study: Assessing Physical Literacy: Leveling the Playing Field for Children and Youth with Disabilities

Principal Student Investigator: Erica Dugas, MA Candidate
Faculty of Applied Health Sciences, Brock University

INVITATION

The following letter and consent form is to inform you of a study we wish to conduct with the Brock Niagara Penguins and to seek your permission to participate in the study. The purpose of this research project is to better understand the level of physical literacy in children and youth with physical disabilities using revised assessment tools from Canadian Sport for Life's Physical Literacy Assessment for Youth (PLAY). The concept of being literate involves being educated or cultured and having knowledge and competence. The concept of physical literacy is similar, but applied to movement, that is, one's level of competency and motivation for physical movement. Participating in this research project will also help to enhance these levels of physical literacy through quality assessment, training, and programming.

WHAT'S INVOLVED

The study contains several parts in two phases:

PHASE ONE

1. Physical Literacy Assessment (Pre-Test)

The Primary Student Investigator will administer an initial assessment of each participant's level of physical literacy using revised assessment tools from Canadian Sport for Life's PLAY (PLAYBasic, PLAYSelf, and PLAYInventory) Tools. Only these tools will be used to assess participants' levels of physical literacy.

The PlayBasic tool assesses the following 5 movement skills reflective of physical literacy: (1) Traveling; (2) Stopping/coming to a stop; (3) Sending; (4) Retaining; (5) Lift and Lower. PLAYSelf is a short survey completed by the child/youth participant, while PLAYInventory is a survey completed by the child/youth participant in which they report the types of physical activities they participate in. The results of the assessment will be recorded electronically and secured on a password protected USB device and locked in an office at Brock University. The total time to administer the various revised assessment tools is approximately 1-2 hours.

2. Participant Interview #1

Semi-structured interviews with each participant will take place following the initial physical literacy assessment. The interviews will last between 30 and 45 minutes, and will gather insight into:

a) Participants' experience in sport and/or recreation
b) Participants' perceptions of the impact that the Brock Niagara Penguins has had upon acquiring physical literacy
c) Participants' perception of the relevance of physical literacy in their own lives

The interviews will be conducted in a private setting, and audio-recorded. Participants may request to have their parent/guardian or another trusted adult present with them during the interview

Participants will also have the chance to see and read through the assessments and interview questions beforehand, or have them read out loud. Then, the participants can respond verbally to the questions or illustrate their answers.

PHASE TWO

3. Physical Literacy Assessment (Post-Test)

The Primary Student Investigator will administer a follow-up assessment of each participant's level of physical literacy using the same assessment tools (PLAYBasic, PLAYSelf, and PLAYInventory). This will take place 3-4 weeks after the initial assessment. The primary purpose of this assessment is to determine whether the participants improved in their levels of physical literacy. The results of the assessment will be recorded electronically and secured on a password protected USB device and locked in an office at Brock University.
The total time to administer the various revised assessment tools is approximately 1-2 hours.

4. Participant Interview #2

Semi-structured interviews with each participant will once again take place following the secondary physical literacy assessment. The interviews will last between 30 and 45 minutes, and will gather insight into:

a) Participants' perceptions of their levels of physical literacy and whether they improved or not from the initial assessment
b) Participants' experience with and impressions of the revised assessment tools

The interviews will be conducted in a private setting, and audio-recorded. Participants may request to have their parent/guardian or another trusted adult present with them during the interview.

Participants will also have the chance to see and read through the assessments and interview questions beforehand, or have them read out loud. Then, the participants can respond verbally to the questions or illustrate their answers.

Additionally, Program Managers (i.e., coaches, instructors, or leaders) will help to facilitate an open line of communication between the researchers and the participants. They will correspond with the Principal Student Investigator via email and relay any information to you and your child. This includes coordinating a time and location for the assessments and interviews, and addressing any questions or concerns during the study.

POTENTIAL BENEFITS AND RISKS

It is anticipated that this type of research will help provide a better understanding of the levels of physical literacy in children and youth with physical disabilities in sport and recreational settings. Beyond this, it will help to understand how to improve or enhance physical literacy initiatives through quality assessment and programming. Furthermore, this study will serve as a pilot through which to validate the use of a physical literacy assessment tool for children and youth with physical disabilities, and ultimately, for mixed abilities as a whole.

The movement activities used in this study pose no greater risk of physical injury than what would have already been present in existing activities and uses of the PLAY Tools by the Brock Niagara Penguins. In case of injury, the protocols and policies of the sport/physical activity organization will be followed. This includes referral to appropriate medical care if necessary.

There is also the risk that you may feel obliged to take part in this study because you know the researchers. Please be aware that participation is voluntary, and your assessments of physical literacy will in no way affect your involvement with the Brock Niagara Penguins. You can choose to withdraw from the study at any time.

We do not anticipate any emotional risk; however, if you experience feelings of embarrassment or distress, we will stop the physical literacy assessments or interview and remind you that you can withdraw from the study at any time.

CONFIDENTIALITY

- All personal information will be kept strictly confidential and names will be replaced with a pseudonym. Only the Principal Student Investigator and Faculty Supervisor will have access to the pseudonyms and corresponding names. This is required to match pre- and post-data. After all the data has been collected, the list of pseudonyms and corresponding names will be destroyed.
- The Program Managers (and possibly other members of your organization) will be aware of your participation in the study. While your involvement may be known to others, your individual responses will not be known.
- All data will be stored on a password protected portable USB device and secured in a locked cabinet within a locked office located at Brock University. Only the Principal Student Investigator and the Faculty Supervisor will know the lock combination.
- Once the data has been analyzed for the purposes of the research study, physical literacy assessments and interview transcripts will be destroyed. As well, electronic data and audio recordings will be deleted from their respective devices and disposed of appropriately.
- Access to this data for the research purposes identified will be restricted to Principal Student Investigator and Faculty Supervisor involved with the study.
- If you choose to withdraw from the study, the data collected will be destroyed.
- In some rare cases due to mandatory reporting laws, we may have to break confidentiality (report incidences of child abuse or neglect to the authorities).

VOLUNTARY PARTICIPATION

- Participation in this study is voluntary and you may withdraw from the study at any time and for any reason without penalty. You can simply inform the Primary Student Investigator regarding your intention to withdraw.
- Should you choose to withdraw from the research study, all the data used for research purposes will be destroyed.
- If the organization (Brock Niagara Penguins or Easter Seals Ontario, Camp Merrywood) withdraws from the study, then you will also have to withdraw.
- You may ask questions of the Principal Student Investigator at any point during the research process.
- Participation in or withdrawal from the study will in no way impact upon your involvement with the Brock Niagara Penguins.

PUBLICATION OF RESULTS

A summary of the results will be made available to the organization, participants, and their parents in the study in the Fall of 2016. You will also receive a copy of your physical literacy assessments. The results may also be presented at research conferences. It is important to note that the Brock Niagara Penguins will be named as a participating organization in the publication of results, but the confidentiality of each participant will be maintained in each publication and presentation. In the event that names are used in any publication or presentation, pseudonyms will be used to replace actual names and to ensure individual data cannot be identified.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or would like more information, please contact the Principal Student Investigator using the contact information written below. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (14-239). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at Brock University at (905) 688-5550 Ext. 3035, or by email at reb@brocku.ca.

Thank you for your assistance in this project. Please keep a copy of this form.

Erica Dugas
Principal Student Investigator
MA Candidate, Faculty of Applied Health Sciences
Email: erica.dugas2@brocku.ca
Phone: 905-688-5550 x4481

Dr. James Mandigo
Faculty Supervisor
Faculty of Applied Health Sciences
Email: jmandigo@brocku.ca
Phone: 905-688-5550 x4789

✂✂✂

CONSENT FOR PARTICIPATION

I agree to participate in the study described above. I have made this decision based on the information I have read in this letter. I have had the opportunity to ask questions and I know that I can ask more questions in the future. I know that I may change my mind and withdraw consent at any time.

Please indicate with a check mark (✔) your consent for each part of the study

Physical Literacy Assessment #1 (Pre-Test)	YES	NO
Participant Interview #1	YES	NO
Physical Literacy Assessment #2 (Post-Test)	YES	NO
Participant Interview #2	YES	NO

Name: _____

Signature of Participant: _____ Date: _____

Appendix L

Assent Form for Minor Participants: Brock Niagara Penguins

Your parents have allowed me to talk to you about a project that I am working on. I am going to spend a few minutes telling you about our project, and then I am going to ask you if you are interested in taking part in the project.

Who am I?

My name is Erica Dugas and I am a graduate student at Brock University in St. Catharines, Ontario. I am conducting this study for my Master's thesis project.

Why am I meeting with you?

I want to tell you about a study that involves children and youth like yourself. I want to see if you would like to be in the study too.

Why am I doing this study?

I want to better understand your ability to take part in different physical activities and sports, and how you feel when doing so. This is called physical literacy. To determine this, you and I will answer some questions together.

What will happen to you if you are in the study?

If you decide to take part in this study, I will watch you play and ask you some questions. This is not a test, so please do not worry. This will take between 1 and 2 hours. Afterwards, I will ask you to sit down with me and answer a few more questions.

I will watch you play a second time to see if you have gotten better at taking part in different physical activities and sports, and how you felt when doing so. This will take another 1-2 hours to complete, and we will sit down again to review the results. This will last between 30 and 45 minutes. Some examples of interview questions are name 3 things you liked or did not like about the questionnaires; what are the benefits of being able to participate in many different physical activities or sports; or what are some things you can learn at the Brock Niagara Penguins that is important to know in other parts of your life.

Each interview will be recorded so that I can go back and listen to your answers in more detail. You may ask me to have your parent/guardian or another trusted adult present with you during the interview.

You will also have the chance to see and read through the questions beforehand, or have them read aloud to you. Then, you can tell me your answers or illustrate them.

Are there good things and bad things about the study?

What I find in this study will help me to better understand how children and youth like you take part in sports and other physical activities, and if the questions I ask you are a good way to find out.

If the questions make you feel upset, please let me know and/or your parent or an adult that you trust know so that we can help you. You also do not have to answer any questions that make you feel upset. You can still be part of the Brock Niagara Penguins.

Who will know that you are in the study?

The things you say and any information we write about you will not have your name with it. I will replace your actual name with a fake name. However, there may be times when you will be seen or overheard participating in the study. If this happens, I will not talk about you or your answers with anyone who is not involved in the study.

I will provide you and your parents with a report of what we have learned at the end of the study in September 2016. You will also be given your question sheets to keep.

If you tell me that someone has hurt you, I will need to tell someone who can help.

Do you have to be in the study?

You do not have to be in the study. No one will get angry or upset with you if you do not want to do this. Please tell me if you do not want to be in the study. Remember, if you decide to be in the study but later you change your mind, then you can tell me you do not want to be in the study anymore. If you choose not to be in the study, I will delete all of the information you have given me. For those who have chosen to not participate in the study, they will be doing regular sport or recreational activities within the Brock Niagara Penguins.

Do you have any questions?

You can ask questions at any time. You can ask now or you can ask later. You can talk to me or you can talk to someone else such as your parent/guardian or at any time during the study. Here is my contact information:

Erica Dugas
Principal Student Investigator
MA Candidate, Faculty of Applied Health Sciences
Email: erica.dugas2@brocku.ca
Phone: 905-688-5550 x4481

Dr. James Mandigo
Faculty Supervisor
Faculty of Applied Health Sciences
Email: jmandigo@brocku.ca
Phone: 905-688-5550 x4789

ASSENT (MINOR) FOR PARTICIPATION

Please indicate with a check mark (✔) which part of the study you want to be in:

Physical Literacy Assessment #1 (Pre-Test)	YES	NO
Participant Interview #1	YES	NO
Physical Literacy Assessment #2 (Post-Test)	YES	NO
Participant Interview #2	YES	NO

PLEASE PRINT YOUR NAME ON THE LINE BELOW:

Participant's name, printed: _____

Date: _____

Name of the researcher, printed: _____

Signature of the Researcher: _____ Date: _____

Appendix M

Parent/Guardian Consent Form for Minor Participants: Brock Niagara Penguins

Title of Study: Assessing Physical Literacy: Leveling the Playing Field for Children and Youth with Disabilities

Principal Student Investigator: Erica Dugas, MA Candidate
Faculty of Applied Health Sciences, Brock University

INVITATION

The following letter and consent form is to inform you of a study we wish to conduct with the Brock Niagara Penguins and to seek your permission to have your child participate in the study. The purpose of this research project is to better understand the level of physical literacy in children and youth with physical disabilities using revised assessment tools from Canadian Sport for Life's Physical Literacy Assessment for Youth (PLAY). The concept of being literate involves being educated or cultured and having knowledge and competence. The concept of physical literacy is similar, but applied to movement, that is, one's level of competency and motivation for physical movement. Participating in this research project will also help to enhance these levels of physical literacy through quality assessment, training, and programming.

WHAT'S INVOLVED

The study contains several parts in two phases:

PHASE ONE

1. Physical Literacy Assessment (Pre-Test)

The Principal Student Investigator will administer an initial assessment of each consenting participant's level of physical literacy using revised assessment tools from Canadian Sport for Life's PLAY (PLAYBasic, PLAYSelf, and PLAYInventory) Tools. Only these tools will be used to assess participants' levels of physical literacy.

The PlayBasic tool assesses the following 5 movement skills reflective of physical literacy: (1) Traveling; (2) Stopping/coming to a stop; (3) Sending; (4) Retaining; (5) Lift and Lower. PLAYSelf is a short survey completed by the child/youth participant, while PLAYInventory is a survey completed by the child/youth participant in which they report the types of physical activities they participate in. The results of the assessment will be recorded electronically and secured on a password protected portable USB device and locked in an office at Brock University.

The total time to administer the various revised assessment tools is approximately 1-2 hours.

2. Participant Interview #1

Semi-structured interviews with participants will take place following the initial physical literacy assessment. The interviews will last between 30 and 45 minutes, and will gather insight into:

a) Participants' experience in sport and/or recreation
b) Participants' perceptions of the impact that the Brock Niagara Penguins has had upon acquiring physical literacy
c) Participants' perception of the relevance of physical literacy in their own lives

The interviews will be conducted in a private setting, and audio-recorded. Participants may request to have their parent/guardian or another trusted adult present with them during the interview.

Participants will also have the chance to see and read through the assessments and interview questions beforehand, or have them read out loud. Then, the participants can respond verbally to the questions or illustrate their answers.

PHASE TWO

3. Physical Literacy Assessment (Post-Test)

The Principal Student Investigator will administer a follow-up assessment of each participant's level of physical literacy using the same assessment tools (PLAYBasic, PLAYSelf, and PLAYInventory). This will take place 3-4 weeks after the initial assessment. The primary purpose of this assessment is to determine whether the participants improved in their levels of physical literacy. The results of the assessment will be recorded electronically and secured on a password protected portable USB device and locked in an office at Brock University.

The total time to administer the various revised assessment tools is approximately 1-2 hours.

4. Participant Interview #2

Semi-structured interviews with participants will once again take place following the secondary physical literacy assessment. The interviews will last between 30 and 45 minutes, and will gather insight into:

a) Participants' perceptions of their levels of physical literacy and whether they improved or not from the initial assessment
b) Participants' experience with and impressions of the revised assessment tools

The interviews will be conducted in a private setting, and audio-recorded. Participants may request to have their parent/guardian or another trusted adult present with them during the interview.

Participants will also have the chance to see and read through the assessments and interview questions beforehand, or have them read out loud. Then, the participants can respond verbally to the questions or illustrate their answers.

Additionally, Program Managers (i.e., coaches, instructors, or leaders) will help to facilitate an open line of communication between the researchers and the participants. They will correspond with the Principal Student Investigator via email and relay any information to you and your child. This includes coordinating a time and location for the assessments and interviews, and addressing any questions or concerns during the study.

POTENTIAL BENEFITS AND RISKS

It is anticipated that this type of research will help provide a better understanding of the levels of physical literacy in children and youth with physical disabilities in sport and recreational settings. Beyond this, it will help to understand how to improve or enhance physical literacy initiatives through quality assessment and programming.
Also, this study will serve as a pilot through which to validate the use of a physical literacy assessment tool for children and youth with physical disabilities, and ultimately, for mixed abilities as a whole.

The movement activities used in this study pose no greater risk of physical injury than what would have already been present in existing activities and uses of the PLAY Tools by the Brock Niagara Penguins. In case of injury, the protocols and policies of the sport/physical activity organization will be followed. This includes referral to appropriate medical care if necessary.

There is also the risk that you and/or your child may feel obliged to take part in this study because you know the researchers. Please remember participation is voluntary, and that assessments of physical literacy will in no way affect your involvement with the Brock Niagara Penguins. You and/or your child can choose to withdraw from the study at any time.

We do not anticipate any emotional risk; however, if your child experiences any feelings of embarrassment or distress, we will stop the physical literacy assessments or interview. I will then remind them participants that their participation is voluntary, and that it will not affect their involvement in their respective program. We will also encourage the participants to speak to you or another trusted adult, and will provide the number for Kids Help Phone to use at their discretion.

CONFIDENTIALITY

- All personal information will be kept strictly confidential and names will be replaced with a pseudonym. Only the Principal Student Investigator and Faculty Supervisor will have access to the pseudonyms and corresponding names. This is required to match pre- and post-data. After all the data has been collected, the list of pseudonyms and corresponding names will be destroyed.
- The Program Managers (and possibly other members of your organization) will be aware of your child's involvement in the study. While your child's participation may be known to others, their individual responses will not be known.
- All data will be stored on a password protected portable USB device and secured in a locked cabinet within a locked office located at Brock University. Only the Principal Student Investigator and the Faculty Supervisor will know the lock combination.
- Once the data has been analyzed for the purposes of the research study, physical literacy assessments and interview transcripts will be destroyed. As well, electronic data and audio recordings will be deleted from their respective devices and disposed of appropriately.
- Access to this data for the research purposes identified will be restricted to Principal Student Investigator and Faculty Supervisor involved with the study.
- If you or your child chooses to withdraw from the study, the data collected will be destroyed.
- In some rare cases due to mandatory reporting laws, we may have to break confidentiality (report incidences of child abuse or neglect to the authorities).

VOLUNTARY PARTICIPATION

- Participation in this study is voluntary and you and/or your child may withdraw from the study at any time and for any reason without penalty. You or your child can simply inform the Primary Student Investigator regarding your intention to withdraw.
- Should your child choose to withdraw from the research study, all the data used for research purposes will be destroyed. If the organization (Brock Niagara Penguins or Easter Seals Ontario, Camp Merrywood) withdraws from the study, then their child/youth participants will also have to withdraw.
- You may ask questions of the Principal Student Investigator at any point during the research process.
- Participation in or withdrawal from the study will in no way impact upon participants' involvement in the Brock Niagara Penguins.

PUBLICATION OF RESULTS

A summary of the results will be made available to the organization, participants, and their parents in the study in the Fall of 2016. Your child will also receive a copy of their physical literacy assessments. The results may also be presented at research conferences. It is important to note that the Brock Niagara Penguins will be named as a participating organization in the publication of results, but the confidentiality of each participant will be maintained in each publication and presentation. In the event that names are used in any publication or presentation, pseudonyms will be used to replace actual names and to ensure individual data cannot be identified.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or would like more information, please contact the Principal Student Investigator using the contact information written below. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (14-239). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at Brock University at (905) 688-5550 Ext. 3035, or by email at reb@brocku.ca.

Thank you for your assistance in this project. Please keep a copy of this form.

Erica Dugas
Principal Student Investigator
MA Candidate, Faculty of Applied Health Sciences
Email: erica.dugas2@brocku.ca
Phone: 905-688-5550 x4481

Dr. James Mandigo
Faculty Supervisor
Faculty of Applied Health Sciences
Email: jmandigo@brocku.ca
Phone: 905-688-5550 x4789

CONSENT FOR PARTICIPATION

I agree to allow my child to participate in the study described above. I have made this decision based on the information I have read in this letter. I have had the opportunity to ask questions and I know that I can ask more questions in the future. I know that I may change my mind and withdraw consent at any time.

Please indicate with a check mark (✔) your consent for each part of the study

Physical Literacy Assessment #1 (Pre-Test)	YES	NO
Participant Interview #1	YES	NO
Physical Literacy Assessment #2 (Post-Test)	YES	NO
Participant Interview #2	YES	NO

Child/Youth's Name: _____

Child/Youth's age on July 1, 2015: _____

Name of Parent or Guardian: _____

Signature of Parent or Guardian: _____ Date: _____

Appendix N

Participant Information Form: Adapted Physical Activity Experts

Title of Study: Assessing Physical Literacy: Leveling the Playing Field for Children and Youth with Disabilities

Principal Student Investigator: Erica Dugas, MA Candidate
Faculty of Applied Health Sciences, Brock University

The following information sheet is to inform you of a study we wish to conduct within 2 separate sport/recreation organizations in Ontario, and to seek your professional opinion about.

The purpose of this research project is to better understand the level of physical literacy in children and youth with physical disabilities using revised assessment from Canadian Sport for Life's Physical Literacy Assessment for Youth (PLAY) Tools. The concept of being literate involves being educated or cultured and having knowledge and competence. The concept of physical literacy is similar, but applied to movement, that is, one's level of competency and motivation for physical movement. Participating in this research project will also help to enhance these levels of physical literacy through quality assessment, training, and programming.

As a self-identified Adapted Physical Activity expert, you will be asked to evaluate the revised assessment from Canadian Sport for Life's PLAY Tools. The PLAY Tools, designed for coaches, exercise professionals, physiotherapists, athletic therapists, recreational leaders, parents and children, make it possible to determine individuals' physical literacy levels in much the same way as literacy or numeracy levels. You will be required to read through the revised tools and then provide a written response to 5 questions. The questionnaire will last approximately 30 minutes, and will gather insight into:

a) Your experience in Adapted Physical Activity;
b) Your understanding of physical literacy;
c) Your impressions of the revised physical literacy assessment tool; and
d) The feasibility of the revised physical literacy assessment tool.

This feedback will be used to enhance the content validity of the revised physical literacy assessment tool. Furthermore, please return the questionnaire to the Principal Student Investigator within one week via email or the pre-stamped envelope provided.

It is anticipated that this type of research will help provide a better understanding of the levels of physical literacy in children and youth with physical disabilities in sport and recreational settings. Beyond this, it will help to understand how to improve or enhance physical literacy initiatives through quality assessment and programming.

There are no known or anticipated risks associated with your participation in this study.

The following measures will be taken to ensure confidentiality:

- All personal information will be kept strictly confidential. Individual data will not be included in the final report.
- All data will be stored on a password protected portable USB device and secured in a locked cabinet within a locked office located at Brock University. Only the Principal Student Investigator and the Faculty Supervisor will know the combination to the lock.

- Once the data has been analyzed for the purposes of the research study, all hard copies of the questionnaires will be destroyed.
- Access to this data for the research purposes identified will be restricted to Principal Student Investigator and Faculty Supervisor involved with the study.

If you are interested, a summary of the results will be made available to Adapted Physical Activity experts following the completion of the study and a successful defense in the Fall of 2016.

If you have any questions about this study or would like more information, please contact the Principal Student Investigator using the contact information written below. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (14-239). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at Brock University at (905) 688-5550 Ext. 3035, or by email at reb@brocku.ca.

Thank you for your assistance in this project. Please keep a copy of this form.

Erica Dugas
Principal Student Investigator
MA Candidate, Faculty of Applied Health Sciences
Email: erica.dugas2@brocku.ca
Phone: 905-688-5550 x4481

Dr. James Mandigo
Faculty Supervisor
Faculty of Applied Health Sciences
Email: jmandigo@brocku.ca
Phone: 905-688-5550 x4789

Appendix O

Participant Consent Form: Adapted Physical Activity Experts

Title of Study: Assessing Physical Literacy: Leveling the Playing Field for Children and Youth with Disabilities

Principal Student Investigator: Erica Dugas, MA Candidate
Faculty of Applied Health Sciences, Brock University

INVITATION

The following consent form is to inform you of a study we wish to conduct within 2 separate sport/recreation organizations in Ontario, and to seek your permission to participate in the study. The purpose of this research project is to better understand the level of physical literacy in children and youth with physical disabilities using revised assessment from Canadian Sport for Life's Physical Literacy Assessment for Youth (PLAY) Tools. The concept of being literate involves being educated or cultured and having knowledge and competence. The concept of physical literacy is similar, but applied to movement, that is, one's level of competency and motivation for physical movement. Participating in this research project will also help to enhance these levels of physical literacy through quality assessment, training, and programming.

WHAT'S INVOLVED

As a self-identified Adapted Physical Activity expert, you will be asked to evaluate the revised assessment from Canadian Sport for Life's PLAY Tools. The PLAY Tools, designed for coaches, exercise professionals, physiotherapists, athletic therapists, recreational leaders, parents and children, make it possible to determine individuals' physical literacy levels in much the same way as literacy or numeracy levels. You will be required to read through the revised tools and then provide a written response to 5 questions. The questionnaire will last approximately 30 minutes, and will gather insight into:

a) Your experience in Adapted Physical Activity
b) Your understanding of physical literacy
c) Your impressions of the revised physical literacy assessment tool
d) The feasibility of the revised physical literacy assessment tool

This feedback will be used to enhance the trustworthiness of the revised physical literacy assessment tool. Furthermore, please return the questionnaire to the Principal Student Investigator within one week via email or the pre-stamped envelope provided.

POTENTIAL BENEFITS AND RISKS

It is anticipated that this type of research will help provide a better understanding of the levels of physical literacy in children and youth with physical disabilities in sport and recreational settings. Beyond this, it will help to understand how to improve or enhance physical literacy initiatives through quality assessment and programming.
There are no known or anticipated risks associated with your participation in this study.

CONFIDENTIALITY

- All personal information will be kept strictly confidential. Individual data will not be included in the final report.
- All data will be stored on a password protected portable USB device and secured in a locked cabinet within a locked office located at Brock University. Only the Principal Student

Investigator and the Faculty Supervisor will know the combination to the lock.
- Once the data has been analyzed for the purposes of the research study, all hard copies of the questionnaires will be destroyed.
- Access to this data for the research purposes identified will be restricted to Principal Student Investigator and Faculty Supervisor involved with the study.

VOLUNTARY PARTICIPATION
- Participation in this study is voluntary and you may withdraw from the study at any time and for any reason without penalty. You can simply inform the Principal Student Investigator regarding your intention to withdraw.
- Withdrawing from this study will not affect your reputation as a professional or scholar, and there are no further limitations to withdrawal.
- Should you choose to withdraw from the research study, all the data used for research purposes will be destroyed.
- You may ask questions of the Principal Student Investigator at any point during the research process.

PUBLICATION OF RESULTS

A summary of the results will be made available to Adapted Physical Activity experts following the completion of the study and a successful defense in the Fall of 2016. The results may also be presented at research conferences.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or would like more information, please contact the Principal Student Investigator using the contact information written below. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (14-239). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at Brock University at (905) 688-5550 Ext. 3035, or by email at reb@brocku.ca.

Thank you for your assistance in this project. Please keep a copy of this form.

Erica Dugas
Principal Student Investigator
MA Candidate, Faculty of Applied Health Sciences
Email: erica.dugas2@brocku.ca
Phone: 905-688-5550 x4481

Dr. James Mandigo
Faculty Supervisor
Faculty of Applied Health Sciences
Email: jmandigo@brocku.ca
Phone: 905-688-5550 x4789

✂✂

CONSENT FOR PARTICIPATION

I agree to participate in the study described above. I have made this decision based on the information I have read in this letter. I have had the opportunity to ask questions and I know that I can ask more questions in the future. I know that I may change my mind and withdraw consent at any time.

Name: _____

Signature of Participant: _____ Date: _____

Appendix P

Qualitative Questionnaire for Adapted Physical Activity (APA) Experts:

1. What is your background in Adapted Physical Activity?
2. Are you familiar with the concept of physical literacy? If yes, what do you believe to be the significance of the development of physical literacy in children and youth with physical disabilities?
3. What are your positive impressions of the revised physical literacy pathway tool?
4. What are your negative impressions of the revised physical literacy pathway tool? Is there anything missing from the physical literacy pathway tool?
5. Do you believe this pathway tool is feasible to conduct a physical literacy assessment for children and youth with physical disabilities?

Appendix Q

Phase 1 Semi-structured Interview Script for Participants:

1. Tell me a little bit about yourself (e.g., where you live, what grade you're in, your family, what activities you like to do, etc.).
2. How long have you been attending the Brock Niagara Penguins/Camp Merrywood? What kinds of physical activities or sports are you involved in?
3. What do you like about the Brock Niagara Penguins/Camp Merrywood?
   a. For younger participants, draw a picture of your favourite memory from the Brock Niagara Penguins/Camp Merrywood.
4. Why did you join the Brock Niagara Penguins/Camp Merrywood?
   a. What do you like about playing sports or being physically active?
5. Let's review the results from your physical literacy pathway tool. Which skill, or skills, were you most confident in performing? Why?
   a. *Then, follow up with the remaining skills that were not recognized/identified here.*
6. I noticed that your results agreed/disagreed with this.
   a. If results agree with personal assessment: Can you elaborate on this? What kinds of things contribute to your proficiency in this skill(s)?
   b. If discrepancy between personal assessment and results: Why do you think you felt confident about this skill, but did not execute a high quality movement? **OR** Why did you perform this skill well, but did not feel very confident?
   c. Do you think that you may not be physically able to execute the skill, or that the skill is not within your physical capabilities?

7. Where else might you have ***used*** these skills?
8. Where else ***could you use*** these skills (i.e., specific sport or physical activity example)?
9. Was there a skill that you were not comfortable in performing? Why or why not?
10. I noticed that your results agreed/disagreed with this.
    a. If results agree with personal assessment: Can you elaborate on this? What kinds of things contribute to the 'gaps' in performing this skill(s)?
    b. If discrepancy between personal assessment and results: Why do you think you felt confident about this skill, but did not execute a high quality movement? OR Why did you perform this skill well, but did not feel very confident?
11. What is one of your favourite sports or physical activities? Can you identify one of the main skills used in this sport or physical activity? (e.g., in soccer, the main skills might be kicking)
12. Do you have a goal that you'd like to achieve while in the Brock Niagara Penguins/at Camp Merrywood? Is there a physical activity or sport that is not offered, but that you would like to try?

Appendix R

Phase 2 Semi-structured Interview Script for Participants:

1. I noticed an improvement in your level of physical literacy. Do you agree with this?

OR

1. I noticed that you did not show improvement in your level of physical literacy. Do you agree with this?

2. Do you think it is important to be fit? Why or why not?

3. Name **3** things that you **liked** about the physical literacy pathway tool.

4. Name **3** things you **didn't like** about the physical literacy pathway tool.

5. Do you think that what is learned in the Brock Niagara Penguins program/at Camp Merrywood is transferred to other parts of your life? Why or why not?

6. What would you do to improve the physical literacy pathway tool? Is there anything that could be changed about the Brock Niagara Penguins/Camp Merrywood to make this more effective and impactful?

7. If you were to tell your peers about the benefits of physical literacy, what would they be, and why?

Appendix S

Brock University
Research Ethics Office
Tel: 905-688-5550 ext. 3035
Email: reb@brocku.ca

Social Science Research Ethics Board

Certificate of Ethics Clearance for Human Participant Research

DATE: 5/21/2015

PRINCIPAL INVESTIGATOR: MANDIGO, James - Kinesiology

FILE: 14-239 - MANDIGO

TYPE: Masters Thesis/Project STUDENT: Erica Dugas
SUPERVISOR: James Mandigo

TITLE: Assessing Physical Literacy: Leveling the Playing Field for Children and Youth with Disabilities

ETHICS CLEARANCE GRANTED

Type of Clearance: NEW Expiry Date: 5/31/2016

The Brock University Social Science Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement. Clearance granted from 5/21/2015 to 5/31/2016.

The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before 5/31/2016. Continued clearance is contingent on timely submission of reports.

To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page at http://www.brocku.ca/research/policies-and-forms/research-forms.

In addition, throughout your research, you must report promptly to the REB:

a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants;
c) New information that may adversely affect the safety of the participants or the conduct of the study;
d) Any changes in your source of funding or new funding to a previously unfunded project.

We wish you success with your research.

Approved:

Jan Frijters, Chair
Social Science Research Ethics Board

Note: Brock University is accountable for the research carried out in its own jurisdiction or under its auspices and may refuse certain research even though the REB has found it ethically acceptable.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of research at that site.